Clayton K.S. Chun

WAR, MILITARY THEORY, AND STRATEGY

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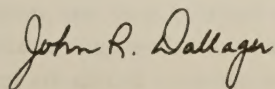
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Educating future military officers is a vital link towards maintaining the nation's security. A primary foundation for developing these leaders depends on a solid grounding of the theory, principles, and applications of military power. Without this foundation, national and military leaders would have a difficult time planning, developing, structuring, and deploying air, space, ground, and sea forces in today's dynamic world environment. With the end of the Cold War, the United States military has been challenged with a series of world events that have forced our leaders to apply air and space power in many innovative ways to fight major wars, terrorists, and conduct a host of peacekeeping operations. These changing conditions have forcediv many air and space leaders to focus and question many previously held beliefs on military power and its role in meeting national objectives. Future leaders must understand the capabilities and limitations of military power to envision how to plan, operate, and build future capabilities to protect the nation.

Clay Chun's *War, Military Theory, and Strategy: An Introduction* starts, for many, your first serious study of military theory and war. It provides a great start towards understanding the importance of military power and how the nation conducts modern warfare. Military power is continually changing because of new technology, national interests, threats, theories, and conditions. However, many basic principles about military power have stood the test of time and warfare. This book provides the reader with many of these time-tested thoughts and principles for your consideration and reflection. Although this book was written for future officers, individuals desiring a broad overview of military power are invited to read, share, and discuss many of the ideas and thoughts presented here. Throughout your careers, these ideas will touch your actions as senior leaders apply many of these theories to plan campaigns or conduct operations that you might execute. One day, you may be in a position where you command the forces of joint or combined task forces and must make life or death decisions. Many of those decisions will depend on your understanding of military theory.

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INTRODUCTION

Today, the United States faces a very interesting period in relation to its national security affairs. This nation is not only the sole world superpower in terms of military strength, but also excels in other spheres, such as economic power. Unfortunately, we as a nation do not face a single threat, but a number of potential foes that range from rising peer competitors to terrorists. Our national leadership must find ways to effectively and efficiently solve a multitude of problems in which military power is important, but other instruments of power play an ever increasing role in solving many of these concerns. The nation may need to craft a policy that uses military, political, economic, and informational tools with great skill to achieve the country's goals. Military power does, however, play a critical role in solving the nation's security problems and will continue to do so throughout the twenty-first century.

This text provides an introduction to warfare, military theory, strategy, and the principles of war. A future military officer or national leader must have a firm foundation regarding basic information and concepts about conflict and how one can use the military to solve unique problems that involve the force of arms. The definition of war and the causes of war provide the first challenge to a leader. This evaluation can reveal valuable insights on the type of conflict, a foe's mindset, objectives, potential solutions, and other information that allows one to put a problem into proper perspective. Currently, the U.S. military operates forces around the globe and must have the capability to successfully deploy or fight in diverse situations and environments. The country can produce either absolutely more forces that are capable of fighting in a specified range of conditions, or a more flexible force that leaders can mold into an effective tool to meet any number of challenges. The nation does not have inexhaustible resources. The future military officer will have to become knowledgeable about the nation's and services' capabilities, and must be aware of other military tools as well. Specifically, he or she must be cognizant of ground, sea, air, and aerospace forces, their limitations and strengths, and how they are applied optimally in specific situations. The combination of using these joint forces and those of other coalition national forces, although not a new concept, has become more crucial in today's world as global responsibilities expand and the potential for conflict increases.

This study requires a background in military theory. Concepts about war and fighting are centuries old. Some thoughts about why nations go to war seem ageless; others are strictly limited to a particular situation at hand. I have tried to provide the student with a good selection of the most relevant military theorists, ranging from Thucydides, who wrote about warfare in ancient Greece, to those who write about air, naval, and nuclear power today. Each of the theorists presents a view that may significantly differ from the reader's own beliefs, but an appreciation of what may have motivated or influenced other actors, friendly and otherwise, is very important. Because air force officers will most likely operate in some combination of surface forces and foreign militaries, an understanding of the major ideas about warfare in those mediums can go a long way to improve policy, planning, organizing, equipping, and fighting alongside those forces.

The fundamental value of military theory is not in historical examples or the context they provide us, but in the thoughts and concepts that provide a basis to think about a problem. Although some theorists may have lived centuries ago, there are many concepts in their work that seem to have universal appeal and relevance. These theorists, surprisingly, provide much of the philosophy of war that we follow today, and no doubt their influence will continue into the future.

The ideas drawn from these theories, or the principles of war, have a range of applications for military officers. Using surprise or the offensive in war may seem obvious, but as you continue your study of warfare, you will find many cases where simple concepts were violated and disaster was the result. Although these principles of war are important considerations, they are not a list of simple activities that one just follows blindly. The careful consideration of context, threat, available resources, and desired goal, or end-state, will temper how one will approach a problem. Similarly, these principles of war may help you consider how best to use their forces in the future, given the advancement in technological development.

Tomorrow's military force must be able to function in a very unstable world. These forces will need to deploy rapidly and operate in a diverse set of conditions undreamed of in the past. The United States may also face domestic security concerns as terrorists or nations that have the ability to launch an attack with weapons of mass destruction continue to threaten the nation. The pace of operations around the world will increase as countries vie for limited resources or age-old ethnic or religious differences raise conflict to the level of open warfare. These types of conflicts will engage not only this country, but also others within the affected region, a consideration that will force nations to work together to make a better peace. These nations, however, will have differing capabilities and goals that will make military operations more challenging. Operations of this kind will also take more time to settle and may demand a longer commitment to achieve a desired level of peace.

The future military officer must be able to develop a method to apply these ideas effectively. Strategy, or planning how to use available resources to achieve a certain end, is a process not easily mastered. A military leader must weigh various solutions to the host of problems that a nation faces in times of war. Some may seem like simple problems that can easily be solved, but if left unattended may become a critical deficiency during combat. For example, a leader's lack of attention about providing an adequate supply of water may halt operations quickly in most military situations. Strategy examines what we, as a nation, desire and how we will deal with an opponent's capabilities and goals.

Strategy is part art and part science. The ability to apply ideas acquired from military theory and the principles of war requires a balance of ideas and concepts relative to the forces and resources available. The art of strategy relies on a person's ability to evaluate and judge each situation carefully. There are some concrete ideas and concepts that seem to be constant: The routine use of strategic airlift (moving from the continental United States to a war zone) takes exacting planning and scheduling, but air force and other military officers have a extensive experience planning these movements. Much information and many known processes have been proved in combat. Military leaders can use this "science" to help provide invaluable insight into the capabilities and limitations of particular weapons. The requirements needed to support an army in the field are also partly science. If a force needs water to operate in a theater, advance calculations will help determine the appropriate amount of water purification, transport, storage, and distribution capabilities required by the military. These considerations are calculated using more quantitative analysis than art.

Strategy will become an even more complex challenge in the future. Shifting threats, national interests, new weapons, and a rise in conflicts around the world will tax the minds of military leadership. This will especially be true as the U.S. military faces more commitments with fewer resources in terms of personnel, equipment, and bases. The nation's interests concerning expanding relations with other countries for increased trade and investment will force international involvement not only to secure free-market access, but for other reasons. Humanitarian aid and involvement in conflicts where human life is at risk will continue to occupy a prominent place in American foreign policy and require the use of military assets to alleviate these conditions. Unfortunately, with the military trained, organized, and equipped to deploy forces to fight standard actions, they must also have sufficient forces to solve unconventional problems with fewer resources.

These conditions will force national and military leaders to concentrate their efforts on how to use military force in more innovative ways than in the past. The future military leader will become a kind of combined warrior-scholar-diplomat who must integrate a host of concerns and issues into his or her strategy. For example, peacekeeping operations will involve not only military operations for protection, but also maintaining political stability in the region and supporting economic growth. Skilled deployment of political and economic tools can help reduce some of the problems and tensions within a region and among certain groups, which may reduce levels of violence and make the military's peacekeeping efforts more effective.

Writing about military theory and strategy is a challenge. New concepts, threats, technology, and policies change perspectives and shape views. Creating this introductory text on military theory and strategy was a test to balance many ideas. On one hand, the theories and concepts involving military operations must be relevant to the reader, but on the other, they must not be so specific to a particular situation or condition that they become dated quickly. During my military career I saw many books that purported to guide one through the concepts of warfare, but instead concentrated on the most recent conflict, such as Vietnam, the Cold War, or Desert Storm. A useful book must include sufficient theory to expand the reader's horizons to apply divergent thoughts about how to use the military in future conflicts. The examination of military theory that is described dryly without possible relevance to current or future operations is not an appropriate introduction either. I have attempted to create a balance with the material chosen for this book.

I first introduce the reader to some basic concepts. These include a discussion about the concept of war and the causes of war. Why do nations or groups choose to fight? If one can answer this question, then one might be able to offer possible solutions, without purely military options, to ending the conflict quickly and with less bloodshed and damage. Additionally, an understanding of the range of possible conflicts that may involve American military forces can provide a wider perspective of their extent and the value of using different instruments of power to resolve conflict.

I then discuss different military theorists. These introductions to military theorists are designed to familiarize the reader with the main concepts of each individual's work. Further study of the individual's writings provides a fuller appreciation for and examination of each author. Unfortunately, space restrictions have limited the discussion about each author. The challenge for the reader is to compare the writings of authors who may have lived centuries ago to current and future situations. I believe one will find many appropriate applications of these authors' ideas. For example, looking at Sun Tzu's work might explain a lot about the ways that certain militaries approach a particular problem and fight a conflict.

An examination of J. F. C. Fuller's principles of war follows this discussion. The U.S. Army and Air Force, in a number of their doctrinal publications on fighting wars, use these same principles to illustrate key concepts. The discussion does not end after a recitation of the principles of war. Instead, I have used historical case studies to highlight the use of each principle of war or to illustrate the consequences of the failure to consider each point. Although I use a historical case, the reader should not concentrate on its factual details. Instead, a general understanding of the ideas and concepts presented is more important. A reader's interpretation of how a leader or nation used a particular idea or concept to focus military power is very important toward planning operations.

A discussion about strategy development follows. Strategy—the application of military theory, the principles of war, doctrine, threat consideration, military capabilities, and a nation's desired objectives—is difficult to master. These elements and concerns make a dynamic combination that encourages a balance between competing needs and resources. The use of strategy is one of the key determinants of achieving a nation's interests whether it's in a military, political, or economic setting. The reader is introduced to one way to think about strategy: ends, ways, and means. "Ends-ways-means" is only one approach to take when looking at strategy, but it is one of the easiest to understand. The reader is encouraged to devise his or her own approach to strategy.

Finally, I look toward the future of military operations and the concerns our military might face in the next few years. The environment, threat, and new technologies that a country may have to face create many challenges. The United States must have the ability to use the full range of its instruments of power and innovative methods to solve critical issues. The future problems illustrated in my final chapter are meant to be indicative of the complex nature of conflict now facing national leaderships. Some of the concerns may or may not come to fruition. However, I think examining and discussing how one might deal with a problem not yet encountered is vital to an officer's ability to think strategically and critically when making decisions about hypothetical situations that might one day become a military force's actual battle plan.

The connection between national policy and military operations is a very complex process. The nation does not expect to use military actions alone to achieve a national objective. At the height of the world's largest and most diverse conflict, World War II, each side used a combination of not only military, but also political, economic, and informational tools. This book attempts to get the reader to focus on not only the military aspects of solving a national security crisis, but other tools as well. The integration of these other tools is important to coordinating actions not only within the nation, but with its allies as well. Conversely, there are situations in which military tools are not relevant or can, in some situations, be counterproductive. Military leaders must be able to tell their civilian counterparts that other tools would probably be better to exploit first.

Writing this book has been a challenge both professionally and personally. As a junior officer, I always wanted to understand many of the concepts written about in this book. Unfortunately, there were not many introductory books in this subject. Instead, most people referred me to original works. Reading Carl von Clausewitz's treatises or other theorists seemed difficult as an officer candidate to find the relevance and proper context, but I stuck with it. I wanted a general overview of military theory and an understanding of what strategy was all about. Most people have heard the term "strategy," but when asked, they have a difficult time defining the concept. This book attempts to provide a novice with an initial foundation about military theory. Obviously, to master the art and science of strategy, a student needs to continue his or her professional reading and education. Military officers will have ample opportunities throughout their careers to enhance their knowledge and understanding, and most important, the application of these concepts. Take every opportunity to build on this foundation; it will serve you well. An interest in national-security affairs, military history, or even international affairs will shed much light on many of the issues and concepts that I have tried to illustrate in the following chapters. In today's newspapers you will find many connections between diplomatic efforts to end a conflict with tinges of military force mobilization and economic sanctions, while different sides attempt to persuade neutral countries or world organizations, such as the United Nations, with their respective media.

Acknowledgments

The writing of this text has not been my endeavor alone. Many individuals helped with this effort, directly or indirectly. There are many "authors" who helped in many small ways to get this book to its readers. The many people who motivated me to write this book are too numerous to mention. The great commanders and supervisors that I had the pleasure of serving under during my U.S. Air Force career, coworkers, subordinates, students, and others all contributed in the formulation of my thoughts and the motivation to set them down on paper. Most important, the men and women instructing for the 34th Education Squadron at the United States Air Force Academy that teach this subject within their military strategic studies programs inspired me to produce this work. They, along with the rest of the faculty and staff of the Air Force Academy, have the challenge of producing

career military officers out of some of the best and brightest students from across the United States.

Additionally, a great influence on my life was the faculty and staff at the RAND Graduate School, where I was a graduate student. The school's parent organization, the RAND Corporation, allowed me to explore many policy issues relating to national security and defense. These issues gave me the "big picture" about military operations and revealed many underlying issues that affected the success or failure of military actions. The faculty and researchers helped shape my thoughts about national policy and the military as an instrument of power.

My fellow faculty, staff, and students at the United States Army War College also helped influence many of the thoughts contained in the book. Teaching and working with some of the best officers and civilians in the army and the Department of Defense offered me the opportunity to explore and examine many ways to look at national security issues. This perspective allowed me to refine and hone the big picture for many issues. In particular, I would like to acknowledge my office mate, Colonel Larry Forster, U.S.A., for all of the discussions we had that spanned the topics in this book. I would also like to thank the rest of the great faculty members from the Department of National Security and Strategy for the opportunity to share my thoughts and approaches with them, and hear their ideas in return.

I want to express a special thanks to the staff at Houghton Mifflin for putting this book together. Sheila Ellis and Harmony Flewelling provided much guidance and help in this endeavour.

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I fully assume all responsibility for any errors or omissions in the text. Unfortunately, theories and concepts change. This book is only a simple introduction to a complex field of study, and I sincerely hope this short examination of the field will provide the motivation for future officers to continue their interest in military affairs.

1

THE MEANING
AND CAUSES OF WAR

What is war? How should we think about it? Most people would agree that war is one of the most heinous travesties to befall mankind. Unfortunately, it is also one of the world's oldest known organized endeavors, predating such civilized activities as writing. Indeed, the inspiration for many classical works of literature can be found in explaining or describing war; the subject has fascinated people through the ages. The inevitability or the morals of armed conflict are not discussed here. Future military leaders must understand what might cause a war. The nature of warfare and military thought as a study is an important element for not only military professionals, but also anyone interested in national security or international affairs. If the purpose of a strong military is to prevent war or, if war is inevitable, to win a conflict, then one needs to define first what war represents.

The term "war" has been used in so many contexts that its meaning may be clouded in the minds of some students. Perhaps you have heard about different types of war that our society engages in: the war on poverty, drug wars, trade wars, the war on terrorism, or similar characterizations that focus on some type of human conflict. This book defines war primarily as conflict, including armed confrontations, between nation-states and other actors.

Authors have written extensively about war and why it exists. Any professional military officer who takes up arms or supports their use must appreciate the implications and effects of doing so; the potential loss of life or property is a great price for any nation to pay. Additionally, understanding the root causes of war might allow timely nonmilitary intervention in a deteriorating situation, thereby avoiding a fight. Responsible leadership demands that military officers provide the best possible advice to civilian leadership on matters about war, because their counsel affects the nation's existence. Similarly, military officers also plan and execute many complex operations that involve this country's and allied nation's military forces. These operations may involve unique situations that call for exacting results. For example, the United States is involved in many peacekeeping and antiterrorism operations globally. How does the nation ask a military organized, trained, and equipped for combat operations to suddenly carry out a peacekeeping mission, or fight a terrorist cell?

Defining war is only the first step. Military professionals must learn how to apply their military training and experience to prepare their forces to fight and win wars. The use of strategy can help achieve those goals, or objectives, that the nation pursues during a war or conflict. The application of military forces during particularly difficult conditions, such as deployments in inhospitable locations or conducting unfamiliar operations, requires that a military leader creatively plan and control limited forces while under many constraints. Military forces have deployed and operated in demanding conditions with limited resources for years. In the past, however, national and military leaders primarily focused on their own services or components' military thought and concepts to solve situations. In the future, most joint and multinational operations will need to use air and aerospace, land, and maritime forces in combined actions that requires leaders to operate on not only a military front, but on diplomatic and economic levels as well. How a military leader succeeds in their task will depend on their understanding about war, military theory, and strategy.

What Is War?

One might believe that there is a sharp distinction between war and peace, but the two states are inextricably tied to each other. War conjures up visions of armed individuals and great battles, peace represents an idyllic absence of violent acts. Some believe, however, that the conduct of warfare often does not have the obvious meaning that the description above implies. Nations might direct their military forces to perform duties ranging from fire fighting, delivering humanitarian aid, supporting peacekeeping operations or protecting borders. Where "war" begins or ends is in doubt. War serves many purposes and can be defined in many ways. These distinctions can create much confusion among students about the meaning and purpose of war. Without a firm understanding about war, leaders may start a conflict unintentionally.

Is any conflict considered a war? If so, what purpose does conflict serve? From the late 1940s to the late 1980s, the United States and her allies were locked in a conflict with the Union of Soviet Socialist Republics and her supporters that involved political, economic, informational, and military instruments. There was no direct, open warfare between the United States and the Soviet Union. Both nations, however, aimed thousands of nuclear weapons at one another, armed massive conventional forces, and fought "brushfire" wars around the world, but not directly between themselves. The Cold War was "fought" daily by combat-ready forces that defended vital interests throughout the world. Military forces were used to deter or stop major conflict, yet were a trigger's pull away from a nuclear war. Conversely, World War II encompassed combat between nations around the globe and was fought using weapons ranging from small arms to nuclear weapons. Battles were fought under arctic, desert, and jungle conditions. The results of World War II contributed significantly to the Cold War between the United States and the Soviet Union: political, economic, and military questions were not completely decided with the surrender of Berlin and Tokyo.

Perhaps one way to evaluate warfare is to examine the objective of a conflict. Some might argue that the purpose of war is to make peace. The settlement of World War II did

result in a lasting, if imperfect, "peace." Others might view annihilation of the enemy as war's ultimate goal. Wars that are fought to gain a military advantage might "end" if a specific geographic location is taken. However, how does one measure the successful conclusion of a war fought to ensure political freedoms for a people? As nations become involved in many different types of conflicts around the world, questions about the appropriateness and utility of military forces arise.

The planning and application of military forces depend greatly on the interpretation of the objectives of war. Military theorists throughout the ages have sought to define war. However, depending on the view of the theorist, a person could define war by its scope or purpose. For instance, some military theorists in the early nineteenth-century viewed war on only two levels: absolute and limited. Absolute, or total, war was a highly idealized conflict that involved all resources of a nation and would be fought without interruption or stoppage until one side was victorious. This was war without constraints—no restrictions on levels of violence. The closest mankind has come to absolute or total war may be World War II. Entire societies, economies, and militaries were mobilized and fought until the Axis powers surrendered unconditionally to the Allies. Nuclear warfare and its promise of wholesale destruction of society might be another example.

On the opposite end of the spectrum, a conflict might use less than total resources available to the nation and involve interruptions during the conflict. An example of this limited type of conflict is the Vietnam War. During the height of the fighting, the United States committed over a half-million personnel, thousands of aircraft, and billions of dollars against communist forces in Southeast Asia. Although significant, the investment of these American forces did not represent a total mobilization of the country's resources to fight the war. In addition, the war's objective was not to annihilate the North Vietnamese government, but was to defend and maintain the sovereignty of the Republic of South Vietnam. Throughout ten years of bloody conflict, the United States negotiated with the North Vietnamese and other parties to stop the conflict on several occasions. These actions included holiday truces, temporary halts to the bombing, and sanctuaries. Allied forces also placed certain targets off-limits or restricted the use of military forces. The United States defined this conflict as a limited one; the North Vietnamese had a different perspective. They may have considered their war with the United States as absolute because they were locked in a contest for their very existence. They mobilized their entire population and turned their economy over to making weapons to support the war.

Another way to frame war might be to view warfare at a higher level, above the taking of a particular physical objective, whether it is a nuclear confrontation or minor border skirmishes. There is a common theme among these higher levels of war. War might be seen as "an act of force to compel our enemy to do our will."[1] This definition of war focuses on a nation's ability to use force to ensure an opponent acts in support our interests, or at least does not act against them. The use of force might involve actual deployment of military assets, or the threat alone to use those same forces to coerce or compel nations or others to take certain actions. The "enemy" could be another nation-state, a guerilla or revolutionary movement, or, increasingly, other nonstate actors. Fighting a war typically has an underlying reason. Forcing an enemy to comply with another's will is a reasonable, rational objective. This definition is general enough to analyze many conflicts. The distinction

between the use of force and peace is made. If we accept this definition of war, we might challenge classifying many conflicts "fought" (except the Korean and Vietnam Wars) in the Cold War as "war" since no force was used to change the will of the antagonists.

There have been many other definitions of war. One stressed that war was "a matter of vital importance to the State."[2] War encompassed not only military forces, but the combined use of diplomatic, political, and other interests that affect the outcome of conflict. This definition is wider than the previous view on war in many respects. This new definition considers war at the highest strategic level. The strategic level of war views conflicts and their solutions in relation to national goals and objectives that use the full range of national instruments of power available to a state. This includes military, political, economic, and informational factors. Notice that the first definition focused on the military aspects of war: the use of force to determine whether a nation's interests were advanced.

Both proposed definitions of war are valuable. Depending on the context of a problem, a national leader's perspective on war might be very different than that of a joint task force commander's. Conversely, a soldier taking hostile gunfire in a minor skirmish might believe that he is in his own personal absolute war. Nations attempting to take certain actions might view war in a different light than their opponent, which might open new possibilities for that opponent to exploit. The study of war requires more complex judgment and interpretation than some other areas of study do. Although many writers have attempted to demonstrate that war can be reduced to a series of scientific formulae, the strategic and operational levels of warfare are a combination of art and science. Planning to position, move, and engage military forces takes imagination, expertise, experience, and the acceptance of risk: an art. Conversely, the success of the strategic and operational levels of war depends on the skillful handling of lower-level actions—the tactical level of war. Here, war concentrates on individual battles assigned to particular units, and success is measured by the maneuvering of those units to defeat an opposing force. At the tactical level, the approach to war depends on the ordered arrangement and actions of forces. These activities, or tactics, require precise and standardized movements, and in this realm, more closely resembles a science than an art. Units and individuals train to carry out specific tasks. For example, a combat pilot would practice standard fighter tactics when acting to defeat an enemy air-defense system or shoot down an opposing fighter.

If the definition of war can be viewed in a number of ways, so too can its causes. There are various ways to characterize and explain why a nation might use its military to defeat another country's forces. Man is very ingenious and cunning about finding the means to gain an advantage, military or otherwise, over his fellow man. This includes conflict. For example, countries might go to war to gain a resource or protect themselves from a threat. One way to analyze the causes of war is by the level of actor that takes some action that leads to, or provides the rationale that explains the use of force.

Three Levels of Decision Makers

A student of war may encounter several approaches that a nation might use to handle conflicts with other nations. These methods can help a student understand the complexity of events—from peace initiatives to open hostilities—involving international relations. War might be analyzed and, eventually, defined as to how they may start. One approach is to

evaluate who makes the decisions that can contribute to war. There are at least three levels of decision makers: the international system, the actor, and the individual.[3] Using these levels helps differentiate between organizations and individuals whose actions or influence might initiate a conflict.

Nations sometime work together to achieve a common interest. The environment in which these nations operate, known as the international system, creates a complex mix of relationships. These countries might organize themselves into a voluntary alliance, or group, that can impose many types of responsibilities or pressures on its members. For example, several nations in a region, each having a relatively small defense force, might be threatened by a common foe. These nations could agree to pool their meager military assets and create a larger defensive capability than its separate forces. Nations could then specialize in particular branches in which they had a comparative advantage and so increase the overall capability of the common defense force.

Alliances that combine forces usually obligate those nations to enter a conflict under specific conditions. Normally, the strength of the alliance depends on the commitment and capability of its members to respond rapidly to an attack against a member, or members, of the alliance. An alliance's effectiveness depends on this unconditional guarantee to respond immediately to defend fellow members. This common relationship among nations provides allies with an unbending defensive shield. Alliances, however, also may force its members to take action without benefit of negotiation or deliberation. A member nation, emboldened by the promise that fellow alliance members will come to its aid, might even precipitate a conflict by becoming more aggressive toward a rival. Nations that do not have a vital interest in a particular dispute may find themselves at war because of their alliance commitments. World War I was, arguably, an example of this theory. Once Austria-Hungary declared war on Serbia in 1914, alliance agreements forced other nations to enter the war. These allies may not have had any vital interests at stake during the conflict, but were expected nonetheless to honor their commitments. Similarly, nations that have conflicting interests may come to blows if they believe the relative strength or power between nations has been altered by new alliances.

External threats and concerns are not the only issues played out in the world arena. Individual actors, including nation-states and nonstates, also affect international relations. Political beliefs, economic goals, social ideals, or cultural differences might expand from an internal, national problem into an international crisis. Internal disagreements might create conditions conducive to a revolution or civil war that then can spread throughout a region. This fight could expand rapidly to other nations if the issue being decided concerns commonly held beliefs in those nations, such as generational political movements (e.g., demands for political freedom), religious affiliations, or cultural and ethnic backgrounds in common. Countries might also intervene in the internal sovereign affairs of a state and so trigger a war.

The final level of analysis is that of the individual decision maker. National leaders are influenced by their own human frailties, biases, and interpretation of reality. They might make their decision alone or in concert with a policy-making body. In either case, their deliberations could be limited by insufficient information, faulty analysis, bias, or some other problem. Individual decision makers also might suffer from a mental or physical impairment that threatens their judgment. This potentially flawed decision-making process

might then produce policies that encourage or start a conflict with another nation. Saddam Hussein's August 1990 decision to invade Kuwait was based on several internal objectives that included strengthening his position within Iraq and expanding his nation's territory to increase oil production. Hussein's action energized the United States and other countries to restore the legitimate Kuwaiti government and secure access to oil for the world. Historical examples abound regarding individual decision makers affecting a nation's involvement in a conflict, from direct action that led to war to concentration on diplomacy as a means to avoid it, sometimes at great cost to the people they were charged to lead responsibly.

One can use all three levels of decision makers to explain the choice to start or enter a conflict. A student might find all three levels in play in a particular war, or identify a predominant view of the conflict to one level. In the discussion about the definition of war, we found that war can take on several shades if approached in a different light. The causes of war are also complex and frequently differ depending on one's own viewpoint.

Why Go to War?

A basic reason for a nation to enter into a conflict is to maintain its identity or sovereignty. This rationale might involve securing a national border or countering a threat posed by another country. A country typically wants to keep its national identity and character intact; avoiding being swallowed up or fundamentally altered by another nation is paramount. Survival as an independent country boils down to how a nation wields its power—its ability to influence events in support of national goals or objectives. To preserve their identity and security, nations would have to thwart another country's ability to project its power beyond its borders. One could view this process as a "realist" position. Interactions based on a realist interpretation might leave one with a pessimistic view. The competition for power does not necessarily mean a situation will devolve into an armed confrontation or that the seeking of power is evil. The use of force is only one avenue toward adjusting power levels among nations. Nations could use diplomatic or economic means. Usually, nations use a combination of these elements to seek a particular resolution to their problems.

Countries could also enter a conflict for reasons that do not directly involve their national survival. Since the end of World War I, there have been numerous explanations about why nations go to war. Modern political liberalism, which concentrates on individuals as the centerpiece of decisions, advances several core concepts about the world, including the spread of democracy and increased free-market access. Another approach sees war as a culmination of nations' or groups' ideologies and political systems. Idealism—the belief that peace is the normal state and war is an aberration—defines conflict as a way to restore the world to a "normal" state of peace. Nations might feel obligated to stop a conflict because of compelling humanitarian reasons, to secure freedoms, or to reestablish peace. The 1999 Kosovo air campaign that pitted the North Atlantic Treaty Organization (NATO) members' air forces against Serbian forces was partly aimed at stopping internecine fighting within Kosovo that had caused so many civilian deaths. NATO forces acted in the perceived best interests of a united Europe to halt widespread acts of aggression. A similar example was the United States's intervention in World War I and President

Woodrow Wilson's attempt to create a collective security arrangement (i.e., the League of Nations) at the end of the war to enforce peace and return the world to a relatively conflict-free environment. That war, to many, was fought to secure democracy's principles throughout the world and create a more stable global environment.

Other military thinkers have defined war in far simpler terms. War and its causes were debated heavily by several ancient Greek writers. Thucydides, a chronicler of the Peloponnesian War, summed up the reasons countries go to war as "honor, fear, and interest."[4] Countries might start a military conflict because they believe their nation's honor is at stake at the international level. If a nation's territory, such as a small island, is invaded by an adversary, the wronged country might feel compelled to quell this challenge to its honor. Nations could also strike out at another state because of fear. Suppose that a nation watches its neighbor create or expand its military and weapons capability into a force that can rival this nation's strength. The threatened country might believe that this increased military power presents such a grave danger to its national security that it will launch a preemptive attack to ensure its own survival. The last cause, interest, is aimed at a state's overall national goals or objectives. If a country wants to build a strong economy, it might seek to expand its international trade sector or access to markets. A rival country might block access to a key waterway that inhibits the burgeoning trade capacity of this nation. Imports and exports are stifled. A naval war might ensue to gain access to these global shipping routes. Honor, fear, and interest as legitimate rationales for war have not changed since the Peloponnesian War.

Thucydides identified several key ideas about war that can be recognized in some recent conflicts. Nations might fight one another because of religious-based hatreds or a tradition. The Middle East and the Indian subcontinent have been scenes of numerous wars and border skirmishes because of religious differences and traditional hatreds that date back for centuries. Years of attacks and revenge can leave the region ripe for continuing and ever increasing conflict. In addition, nations can fight to gain material wealth or to expand their territory. Although this rationale is a subset of an overall pursuit of power, it focuses on a more direct desire to acquire a particular resource or capability. In the future, this might be not only raw materials or land, but also space satellite locations or information-transmission bandwidths.

The idea of gain, has always been with mankind; it might simply become more visible in the future as nations fight for limited resources. The competition for resources worldwide, economic development, and calls for increased standards of living have put pressure on many nations to try to alleviate the growing demands among its citizens for more land or raw materials. A nation can exert intense domestic pressures to secure disputed territory for its own use. If one side has gained an advantage over an adversary, it might feel the time is right to exploit its newfound strength. A nation can wage an open war or a more limited conflict to wrest control of these coveted assets away from another country.

Defining and identifying the causes of war, as you can see, is difficult. No one approach to evaluating military conflict fits every situation. Determining the causes of a war can help national leadership decide how best to successfully end the conflict. For example, if the cause is a border dispute, perhaps diplomatic mediation can resolve the problem, eliminates the need to take up arms.

A Continuum of Conflict

Earlier, we argued in one theory, that war could be classified as either absolute or limited. These polar extremes can identify many conflicts, and also helps us define war and how nations might fight. There are many kinds of complex situations that face current national decision makers that involve military forces, which might lead to war in either absolute or limited terms. These military operations other than war (MOOTW) may require a significant military presence and can include activities that approach open fighting and war, but avoid bloodshed. The participants in such a conflict might view their involvement in MOOTW as a nonviolent operation, such as a humanitarian action. Others, however, might view this action as an open conflict that is equivalent to an absolute war. Understanding the range of conflicts possible helps a student learn how to plan strategy, apply military and nomilitary forces, and create an appropriate resolution to a crisis.

The United States has been involved in absolute war and numerous limited wars throughout its history. Since the end of the Cold War, the nation has seen an increase in military deployments that involve many nonmilitary activities and may start as a humanitarian mission, but suddenly turn into an armed confrontation. Nations might have to rapidly change the focus of their operations and adjust their force structure, tactics, or strategy accordingly. The nation also faces the threat of terrorist acts that might strike at a particular target, or random acts by a very few members of a nonstate, up to support by a nation-state. The motivations of a terrorist group are varied. Terrorists might attack another party simply for publicity or may engage in a series of long-term actions to defeat a foe. Terrorist campaigns can be conducted alone by domestic dissidents, or can be organized, led, and supported by another country or groups of individuals. The fluid nature of terrorist activities requires ingenuity to plan and adapt the appropriate military forces to combat the situation. Additionally, at the end of the Cold War, the United States faced a number of military deployments that were not direct military challenges to our national interests. Many of these actions were not initiated as armed interventions, but as humanitarian relief, peacekeeping operations, or antiterrorist measures.

One particularly difficult MOOTW is peace operations, which can take many forms and sometimes lead to conflict. These situations usually involve parties that recently ceased fighting, or are about to erupt into hostilities. The situation is usually tense and subject to deteriorate into a shooting war if not handled carefully. Normally, peace operations are not conducted unilaterally; instead, they are conducted with the cooperation of many nations or international groups, such as the United Nations or similar nongovernmental organizations—for example, the Red Cross. These activities depend on many diplomatic, political, economic, and informational efforts to succeed. The objectives of these missions might be to prevent further suffering or bloodshed or to rebuild a country. However, military forces are usually involved because of their availability, organization, training, and capability.

There are several levels of peace operations. Preventative diplomacy uses negotiation to settle disputes in a peaceful manner before they lead to bloodshed. Diplomats attempt to prevent a problem from escalating into an open conflict by eliminating or neutralizing potential sources of friction. The use of diplomacy requires special skills to satisfy many actors' demands and unique requirements. If nations use diplomacy, they may also need

credible proof of their readiness to react with a show of force, whether it be a military strike or an embargo, if a condition is not met by their opposite party.

A nation might use preventative deployments to demonstrate commitment to another nation's diplomatic efforts or national policy. For example, a nation could send a naval task force to a region, conduct ground-training operations, or engage in long-range flying exercises or operations near the country or area in question. These deployments certainly increase the risk of starting an open conflict and involve more resources, but they do provide a valuable signal of a nation's intentions and capabilities.

A further increase in risk and resource commitments is brought by humanitarian assistance. These operations can involve providing aid within a nation or region that requires food, shelter, or medical and other types of assistance. Humanitarian assistance involves, in some cases, aid to potential adversaries within another nation or between regional rivals. Food, medicine, or other supplies might fall into a combatant's hands, which may inadvertently help one side of a civil war. The risk of extending the conflict is real and can boil over into a region and ignite the flames of war. Military forces can also be used for domestic humanitarian assistance. For example, fire-fighting or law enforcement support by ground forces or airlifts by air forces can greatly aid civil agencies to deliver help after a natural disaster. Domestic assistance presents its own challenge: civil-military relations. Some, usually democratic, nations have strict restrictions on the use of military forces in domestic situations. Police and law enforcement activities usually are vested in civilian, not military, organizations.

A simple evacuation of noncombatants through a humanitarian intervention can raise the level of hostility to open conflict. A nation might introduce military forces and civilian aid workers into an area within a country or disputed territory where noncombatants are threatened by armed forces. Refugees may have fled an open conflict, and now may find themselves in a precarious situation, dependent on relief aid to survive. A nation that has humanitarian aid workers in an area might also expand its mission to include protecting refugees or persons seeking help. If the nation believes that the aid workers might come into harm's way, it could assign armed military forces to the area for security and safety reasons. The presence of foreign military forces, albeit for humanitarian reasons, might be perceived by others as support for a particular faction, putting them in a direct confrontation with indigenous armed groups, which then increases the likelihood of open fighting. Nations could also face a role of enforcing international or regional peace agreements or other activities, such as a general disarmament of forces.

Traditional peacekeeping focuses on upholding an agreement and can include monitoring and implementing a cease-fire. The focus of this mission can be inter- or intrastate. Many traditional peacekeeping operations are used to bolster internal efforts to assure the local populace that the disputed area now is safe and secure. Activities might include stopping fights between groups, investigating agreement violations, arranging prisoner exchanges, monitoring disarmament actions, and other missions. These actions can put peacekeepers at risk of direct harm and can increase the probability of renewed hostilities in the region. Some parties might justify shooting at these forces because they believe the peacekeepers are helping a particular group. For example, peacekeepers might create a sanctuary area for refugees that inadvertently allows guerillas forces to evade local government forces. The government forces might believe that the peacekeepers knowingly allow the

guerillas to use the sanctuary as a safe haven to regroup and organize attacks on cities or other targets.

A more complex and riskier form of peace operations is multidimensional peacekeeping, which may resemble traditional peacekeeping, but typically also involves humanitarian assistance, the rebuilding of civilian institutions and infrastructure, and policing actions. This approach attempts to undertake a whole spectrum of rebuilding efforts in a nation. These functions require support from military and civilian personnel drawn from governmental and nongovernmental organizations. These divergent actors and their work in volatile areas may create any number of scenarios that put them at odds with a hostile group. Some individuals or organized parties in the disputed areas may find the intervention of foreign forces within their sovereignty an affront to their independence and therefore demand an end to these peacekeeping actions. If their demands are not met, they could fight, regardless of potential international sanctions.

The final, and most contentious, form of peace operation is peace enforcement. Peace enforcement includes the use or threat of force to ensure that certain groups of people or an entire nation adheres to international resolutions from sources such as the United Nations Security Council or authorization of force given in its charter. Regional alliances, such as NATO, also may feel compelled to take responsibility for enforcing peace within their field of influence. Usually, peace enforcement requires the use of force when a nation-state's rule of law has broken down, violence threatens to spread outside of its national borders to other countries, or for humanitarian reasons. A country that is under a restrictive sanction or peace agreement may feel that they do not have to comply with any of those initiatives. Another nation or a group of nations may take up arms to compel the misbehaving state or group to stop fighting, respect any international initiatives, or protect the local populace. The critical difference between wartime and peacetime enforcement is the absence, on the side of the nations trying to stop the conflict, of taking a position (i.e., it takes a neutral stance) and their focus on post-conflict restoration of peace and stability.

Peace operations now attract increasing national and international attention around the world. Civil and ethnic wars have sprouted up around the globe. The United States has contributed greatly to peace operations in a number of ways. American military forces have sufficient force, mobility, and other resources to effectively and efficiently conduct many activities to support national policy, United Nations' resolutions, regional alliances, and other groups supporting peace operations. Of course, the United States military does not conduct peace operations only; it also must be able to fight conflicts up to absolute war. These wide-ranging activities put pressure on the nation to provide sufficient funding and resources to continue peace operations. The ability to fight and win wars is placed in jeopardy if sufficient training, adequate forces, and combat-readiness are not attained and maintained. Unfortunately, today's military forces are limited by national allocation of resources, yet their missions have grown in complexity since the end of the Cold War. Understanding the size and scope of war and peace operations helps put the nature of current military operations in context and gives military leaders tools to resolve many of these challenging issues.

In the near future, peace operations will challenge leadership because of its potential to escalate into a wider conflict. Nations may be forced to support these operations for extended periods of time without any clear objectives or schedules for completion. Additionally,

parties may attempt to remove peacekeepers from their region, or some unintentional event may lead to a violent outcome. Future military leaders must contend with these challenging opportunities to ensure that the nation's vital objectives and interests are met, in peace or war.

Military forces might have to wage operations against terrorists or guerilla forces. Nations must identify, locate, contain, and eliminate terrorists—with the help of other nations or not. A war against terrorism may be waged internally or externally. The nation's military may not be able to successfully fight the war by itself. Instead, it may need to cooperate with local police, intelligence agencies, diplomatic corps, and other security forces to defeat this threat. A small number of terrorists might have a particular reason to conduct operations, for example, drawing attention to or seeking resolution of some issue, such as getting members of their group released from prison, and require direct negotiations.

Finally, the continuum of conflict includes open warfare. Nations can resort to limited or large-scale operations against one or many foes. These traditional conflicts have usually focused on the use of military force, but political and economic instruments are also present in these conflicts.

The continuum of conflict has grown wider. The United States has been involved in peace operations, has fought terrorists, and has engaged in major conflicts with more frequency than in the Cold War. There is no one explanation for this occurrence. However, if one traces some of the basic reasons why these conflicts occur, one might identify many of the causes that we have mentioned briefly in our discussion about war.

Summary

The nature of warfare and the conduct of military operations has evolved over the centuries. How people fight in the future inevitably will change as well. Writers from ancient times to the present have studied the philosophy of war and have observed that many characteristics are similar. The ideas about how conflicts are fought and the possibility of moving from a humanitarian mission to an open conflict now present a challenge for our national and military leaders. Surprisingly, the definitions and causes of war have not changed significantly or have needed little modification to better understand the nature of war.

The definition of war depends on the context and viewpoint of a reader. One definition considered war on a strategic level that encompassed many instruments of power that a nation could use to achieve its goals or to protect particular interests. This view envisioned a continuum between peace and war. In this definition, diplomacy and other nonmilitary means are used in a conflict whether it explodes into military operations or not. This explanation of war places the nature and potential conduct of warfare on a higher level than other definitions. Another, more narrow, view defines war as being waged primarily by military forces; succinctly put, "war is fighting."[5] Military means are the only effective method to resolve conflict. Both definitions are correct, if properly applied.

Fighting between nations or groups of people might occur for several reasons. One could look at the causes of war from certain levels of analyses: the international system, nation-state, or single decision-maker. Reasons to fight might include protecting a nation's

honor, reacting to fear, fighting a perceived or actual threat, or trying to gain resources or assets.

Although some may view these changes in military operations and conflict brought about by global deployments as a new situation, the United States has intervened in numerous peace operations in the past and has had to adapt its military to different uses many times. However, the rapid response to and level of interest in certain peace operations and terrorist attacks has changed. Worldwide media can focus on a natural disaster, civil war, or treaty violation in a way that gets the immediate attention of governments, the public, and a host of influential organizations. Agencies concerned with human-rights violations or humanitarian causes can galvanize interest in the situation and mobilize thousands of people via the Internet. Demands by many parties for an issue's swift resolution can increase the chance of military involvement in the situation. These complex situations can ignite into an open conflict depending on whether certain conditions are met.

The unexpected escalation of conflict from a peace operation to a limited or total war may seem like a modern trend, but these concepts are not new. Indeed, in many respects, this observation supports several of the ideas that were first proposed by Thucydides. Aid workers might be kidnapped, injured, or threatened and these actions could trigger violent reprisals. The nation sending these aid workers might then respond by defending those individuals to restore national honor, calm fear, or dissipate an immediate threat to the aid workers. Also, what might appear to be a threat might actually be an unintended or unanticipated reaction to peace operations. Decision makers might miscalculate or use this reaction as a pretext to defend their own precarious political situation and so begin a limited war. The nature of war and ways of thinking about conflict have become more complex and intricate, but there are many lessons to be drawn from established military thought and ideology that can guide future military leaders to meet these significant challenges.

Notes

1. Carl von Clausewitz, *On War* (Princeton, NJ: Princeton University Press, 1984) 75.
2. Sun Tzu, *The Art of War* (New York: Oxford University Press, 1971) 63. There is some speculation that Sun Tzu was not an actual person, but was a literary device that allowed authors to write about war anonymously.
3. John Spanier and Robert L. Wendzel, *Games Nations Play* (Washington, DC: Congressional Quarterly, Inc., 1995) 22.
4. Donald Kagan, *On the Origins of War* (New York: Anchor Books, 1995) 8.
5. von Clausewitz, 127.

2

MILITARY THEORY
AND THOUGHT

In chapter 1, I introduced several definitions of and ideas about war. Military leaders who believe particular concepts and definitions might employ military forces in specific ways. For example, why would a military force choose guerrilla warfare to fight an enemy? Many theories have been advanced about how war should be fought. Understanding why military forces should operate in a certain way helps leaders decide how to best fight wars, and offers insight into an opponent's thinking. Military theory provides this rich background.

Here, I first define what a theory is and why theory is important, to help a student compare military theories' relative merits when deciding whether a particular idea seems reasonable and is applicable in today's world and in the future. A discussion of several key military theorists follows. These ideas and views are based on a collective experience, individual beliefs, events, predictions, national interests, and contemporary technology. A reader should note how the theories evolved, tested by events changed over time. However, their value to today's military thinking, beliefs, and development remains. The study of theory helps frame and make relevant how military power can be employed, developed, and built. More important, these theories may provide an insight into how to solve military problems facing a nation in the future.

What is Military Theory?

Military thinkers have developed, written, and debated the roles and impact of ground, naval, and aerial forces on war for millenia. These enterprising visionaries developed theories on the application of military forces that greatly affected the development of today's military. Although some thinkers developed their ideas thousands of years ago, they still ring true today. Put into a more modern context, Thucydides's ideas may

still be applied to aerospace or information warfare today. Before studying these theories, however, one needs to understand what a theory is and how it can be used in the study of military power.

Theory provides a foundation for a given field of study. A theory can help an individual explain a state of nature, define or establish a set of beliefs about a subject, provide knowledge about the principles of a subject, and predict a future condition. A person can use theory to explain a particular function. This explanation may be conveyed through basic facts or through a model[1] that illustrates events; either method provides an interpretation of the events and actions being studied. Theory guides individuals toward a common understanding about a subject. Ideally, it should define and relay a set of beliefs that people can agree on, discuss, and debate. A theory can also set forth observations about its subject. The principles of war, as earlier discussed, were not proven facts or laws; they were merely a series of ideas expressed by individuals about lessons drawn from combat experience and observation. Finally, a theory should predict or explain how a future condition, situation, or outcome might change if certain beliefs or ideas about a subject are applied. This aspect of a theory allows the individual to say "If one uses this idea, then this will happen."

The above defines the ways theory can be used, but where does theory come from? A person may create a theory through several diverse avenues. Observations from actual events allow one to correlate the cause and effect of events and predict potential outcomes. This gives an individual a rudimentary basis to make some conclusions about the nature of an event if one uses a particular function or takes certain corrective measures. For example, in economics one might observe the conditions of supply and demand. If demand for a product is greater than the supply, the item's price should rise and shortages of the good or service may occur. On the other hand, the increased price might induce firms to produce more of the good or service. Competitors seeking financial profit may also enter the market.

A series of events provides a better foundation for drawing conclusions than does a single observation. Over time, situations that present different conditions may help individuals refine a theory and make it more resilient and universal in scope. Individuals may also form theories through experimentation. A controlled experiment using observed tests might allow one to vary the choice of actions used in similar situations and then to measure the differences in the final results. This measurement requires a careful experimental design. The difference in effects might help one develop a theory on the basis of these results. A theory may also originate from a person's set of beliefs, thoughts, perceived logic, or reflections about a subject. Observation may lead to a series of experiments that results in a belief about a subject. The adoption of theory by military leaders as a framework to develop forces demonstrates its relevance for present and future use. Theory becomes the foundation for the discussion and development of aerospace forces. Individuals and organizations have based their efforts to develop air forces on theory. Theory is always changing and evolving because of dynamic conditions and will require the attention of future leaders to assure the relevance and utility of its application.

What Should Military Theory Do?

Military theories should add to a field of study as in any other academic field, whether it be economics, political science, mathematics, or engineering. Military theory is just one, albeit very important, resource for military leaders to develop a set of plans for combat, build an appropriate military force, train people, and think about how their military forces will fight in the future. Military theories include a complete theory on all aspects of military operations or a single segment, such as strategic-bombardment theory. Regardless of the level of theory, a discussion of how the element of military power is defined regarding its role in particular military operations, its basic propositions, and its effects on the battlefield is paramount.

A complete military theory addresses what forces and elements can contribute to operations, and how a commander should employ those forces in combat to meet an objective. The theory, at a minimum, should be able to reasonably predict "if one employs certain resources under these conditions, then the result will be . . ." given the proper use of force. More important, the theory should discuss how military power will get certain results and explain why those results were achieved. The theory's author can also demonstrate the different capabilities of branches of military forces, such as naval or land forces. This discussion allows a reader to assess the relationship between different military forces' abilities to conduct the same operation and their impact on the battlefield in the future. The proposed theory becomes an integral part of a commander's assessment about and selection of the best forces to accomplish a mission.

"Traditional" military theory has its foundation in the use of land forces. The earliest theories about the origin of war were based on the experience of warriors fighting with stone-edged knives, swords, and spears. The development of theory proceeded through land, naval, air, nuclear power, and, now aerospace activities. Although military theory tried to keep pace with technological and operational growth, there have been periods of transition in which it required rapid refinement, as airpower illustrates. After World War I, there were several airpower advocates who created theories about air forces and how they would affect existing military structures. There were many charged public debates on the implications of these theories, which ranged from an acceptable role of airpower in relation to ground and naval forces to the moral value of using bombers against civilian targets. Airpower theory also was used to justify an independent role for and organization of air forces separate from other forces, and helped national and military leaders plan campaigns against anticipated antagonists in the looming global conflict of World War II. The acquisition, training of forces, and deployment of military aircraft were predicated on these campaign plans, which mirrored the leading airpower theories of the day. The United States built its land-based air forces around the long-range strategic bomber.[2] Other nations, such as Germany, followed a different path; they developed an air force that was designed to support ground forces. After World War II, the United States geared much of its air force to support nuclear operations. Airpower theory had an influential grip on those in charge of the development and capabilities of fighting forces. In the future, revolutionary ideas and theories about aerospace power may result in new organizations, methods of fighting, relations between services, and allocation of available resources in the next war or conflict.

How One Can Use Theory?

Military leaders can use theory in many ways. Theory does not necessarily give one an "answer" to solve any particular situation. War and the conduct of military operations are influenced by many factors. These factors can affect the situation individually or in conjunction with a number of events that make it difficult for an observer to forecast an outcome. The uncertainty about war and the dynamic nature of its conduct does not mean one should abrogate the value of theory. Unlike a more predictable subject, such as mathematics or physics, warfighting cannot be distilled into a few equations that students can learn a few techniques and consistently get certain results. Instead, the study of war encompasses many fields of study, including the sciences, that are subject to human nature. As in a social science, one can use theory to understand the nature of military theory and the factors that might affect a decision in the study of war. Theory can guide a student about what aspects of a case or situation to consider as he or she decides what action to take.

Any person who studies history, economics, or psychology uses theory in a number of ways. These social sciences use theoretical underpinnings to study their field. For example, they may use a commonly accepted vocabulary, a particular way to examine events, and a special focus that allows for a better understanding of and concentration on deficiencies in the subject. A constant struggle in many areas of study is the question of whether theory should remain generalized and highly conceptualized, or try a more detailed approach. A highly conceptual theory can allow one to explain more events, but it also limits its practical application. Conversely, the more applied approach to theory can bring immediate solutions to a problem, but also may have a limited use if it focuses too narrowly on its subject.

From Thucydides to the present, there have been many military theorists and thinkers. These writers might concentrate on a particular aspect of warfare: a way of fighting, type of conflict, or reason for the conflict. Although certain types of theory may not be applicable in every situation, the value of studying the theory is great. The understanding one gets from an approach to a problem, the methodology and reasoning for explaining events, and its way of looking at practical uses can only strengthen a person's understanding of warfare. For example, the study of naval warfare might not seem applicable to air warfare. However, students might find the study of naval warfare beneficial if they need to understand the combination of air, naval, and land power in a conflict. Additionally, new environments in warfare, such as aerospace, might benefit from divergent theories and thoughts. A parallel might be found between maritime and aerospace environments that may help a future theorist solve many problems by using proven theory in a new setting.

The study of classical military theory and thought provides a basic framework for a military profession. Students should not necessarily dismiss theories that may, at first glance, seem outdated, but should examine and debate the central issues carefully and then weigh ideas that come out of their discussion. A more interesting challenge is to explore the reasons why the theorist came to the conclusion that he or she presents. Many of the basic ideas about warfare trace their roots to writers who formulated their opinions centuries ago, but which still find practical and relevant use today. The basis for these theories may have been inspired by a particular campaign or war; students need to learn how to take

those ideas, synthesize them, and find their relevance to today's study of war. All students, whether in the physical sciences, engineering, social sciences, or the humanities, struggle continually to find new and innovative ways to apply past theorems.

Military Theorists Through The Ages

Studying a military theorist's work requires an understanding of the context in which the author framed his ideas. Many theorists participated in military conflicts or witnessed historic events that inspired them to record their opinions for posterity and enhanced the significance of each author's contribution to military theory. Historical events are important; however, the focus of this section is the synthesis of the military theorist's opinions and observations about those events. Military history provides one vehicle for understanding the motivations of and situations faced by military leaders during a confrontation. Military theory approaches the study of war from a different perspective, and can be a valuable guide for students that can eventually be applied in the field.

There are literally thousands of authors who have written historical or contemporary military theory, making the selection of the essential works for further examination a challenge. Many theorists wrote in reaction to advances in technology, changes in warfare, new political ideas, or in response to other authors. Here, I discuss traditional land, sea, air, and, finally more contemporary authors. The sequence chosen follows a historical chronology of recorded warfare; this approach will help trace the evolution of military theory to the present day, in which theorists borrow or build on the ideas of their predecessors.

Thucydides: An Ancient Perspective

Thucydides of Athens wrote about his experiences during the Peloponnesian War, a series of conflicts fought from 431–404 B.C. in Greece. The war was fought after a united Greece had successfully defeated Persian initiatives to conquer Greek city-states. Athens emerged as a leading maritime power that ruled the Aegean Sea and began to rival its neighbor Sparta, a landpower. The Athenian empire grew in stature and strength and soon came into conflict with the Spartan-led Peloponnesian League. The Athenians and the Spartans sparred over control of territories along the border of its alliances for dominance of Greece.

The Peloponnesian War was fought on the Greek mainland and among Athenian and Spartan colonies throughout the Mediterranean Sea. Thucydides recorded these events because of the size and scope of the conflict.[3] Both sides were at their apex of power: politically, economically, militarily, and socially. The Athenians ruled the seas and had many colonies, which allowed for economic and political expansion. Sparta was the dominant land power in Greece, with many influential allies on the Greek mainland. The war devastated both sides, leaving high casualties, huge expenditures of resources, plundered cities, and besieged populations—savagery never seen before in Greek history. The institution of democracy was challenged for its very existence.

Thucydides considered many aspects of war, but believed its chief causes to be honor, fear, and interest, as explored in Chapter 1. He also wrote about other general themes, such as fighting a war for realist and idealist reasons and how these rationales may come into conflict. For example, Melos, an island off the coast of the Peloponnesus, was positioned to provide a naval base to strike Sparta and to protect Athenian colonies in the eastern Mediterranean. Athens was trying to expand its empire and enhance its budding influence. The Athenians had started to take over islands throughout the Aegean Sea. Melos, a member of the Peloponnesian League, had not supported the Spartans against the Athenians. Instead, it acted as if it was neutral. Encouraged by this, the Athenians pressured the Melians to renounce their membership in the Peloponnesian League and join the empire. Melian refusal resulted in Athenian action that threatened to destroy the island's territories.

The Melian dialogue begins with a delegation of Athenian negotiators trying to persuade Melos to drop its neutrality and join the Athenian side, arguing that "the standard of justice depends on the equality of power to compel and that is fact, the strong do what they have their power to do and the weak accept what they have to accept."[4] The Melians counter that, for the general good of all, the Athenians should uphold the ideals of fair play and justice because to do so benefits not only Melos, but Athens as well. Athens, the cradle of democracy, uses a realist position to justify its invasion and attack on Melos. Concerned about its own self-interest (security against a Spartan attack), it faces the prospect of using its might to force a neutral country to bend to its will. The Athenians, who are fighting to maintain their own empire's freedom, nevertheless are willing to destroy a neutral city-state's freedom.

Thucydides recorded the unfortunate consequence of the Melian's refusal of the Athenian demands: destruction. All men of military age were executed and the island's women and children were sold into slavery. One might wonder about the lesson taught to the rest of the Peloponnesian League about resistance—whether it was hopeless to defy the Athenians or strengthened their resolve against their enemy.

The Athenians demonstrated that the realist position works, but now even their allies might well feel cowed to submit to Athenian will, or face the fate of Melos. Athens may have prevailed over Melos, but there was a cost. Her allies began to see Athens not as an equal member of a mutually binding agreement, but as a bully who forced them to follow her political objectives. This was hardly a basis on which to create a true alliance.

Thucydides also examined the balance of power and its role in analyzing war. The Athenian empire and the Peloponnesian League were expanding economically and militarily, fueling political aspirations that began to reach outside of their spheres of influence. After the Persian Wars ended, leaving little external danger, the two alliances began to undermine each other's security. Territorial disputes, access to trade routes, rival military strengths, and other changes threatened to unravel the balance of power in Greece. Alliances enabled small Greek city-states, which could not alter events alone, to greatly increase their power and thereby threaten the stability of the region.[5]

A city-state might not risk going to war alone, but if it could combine forces with alliance members who would reduce its chance of failure, a stake might be tempted to take action even if that meant invading a member of a rival alliance. If other city-states that have shared or common goals develop a counteralliance, the likelihood of an aggressive

move failing increases, and stability in the region is maintained. However, even if the counteralliances create a stable balance of power, the act of moving from a position where one alliance dominates another might cause the dominating alliance to feel a loss of status. The fear of a rival alliance profiting from this new balance of power may force the "losing" alliance to strike out at the "gaining" one to recover its lost status.

Other factors that might stabilize a region are military technology and the accumulation of resources. Resources allow a city-state to expand and maintain its ability to fight a conflict. Additional soldiers, supplies, and the continued operation of forces in the field sustain a city-state's efforts. Similarly, military technology allows the city-state to increase its capabilities to strike or conduct military operations. Thucydides believed that resources were measured primarily through the accumulation of wealth; and military technological advances in shipbuilding allowed naval forces to increase a city-state's offensive capability and improve its fortifications.[6] The combination of alliances, resources, and military capability gives a decision maker tools that can contribute to, or avert, the onset of war.

Alliances, resources, and technological changes are vital, but they do not exist, nor can they operate, by themselves. Alliance members decide on the conditions of alliance contributions. National leaders enact legislation to collect taxes or start programs to accumulate and convert resources to combat-readiness. Military leaders actively budget and fund research and development programs to invent new technology or new applications for weapons systems. These actions all require leadership on a nation's behalf.

Thucydides also reviewed collective behavior—national character—that might influence a city-state's actions. Thucydides recorded the debate among Spartan leadership about going to war against Athens in answer to Athenian aggression against their Peloponnesian League allies. The Spartans considered themselves less wealthy and at a disadvantage in terms of naval strength relative to Athens. In spite of this, one leader believed Sparta should not betray the trust of fellow alliance members and should do everything possible to counteract the Athenians' growing power.[7] Their national character was at stake; Sparta's honor and the fear of increasing Athenian strength carried the nation and its fellow alliance members into war. Thucydides characterized the Spartans as methodical and very slow to move toward a conflict. Sparta's deliberate actions here illustrated the consideration it gave to what it should do about the apparent hegemonic Athenian movements.

The Athenians, on the other hand, were noted for being more active and willing to take a chance if it advanced their interests. In addition, once a decision was made, the Athenians moved quickly.[8] One illustration of Athenian national character was its invasion of Sicily, which supported the Spartan alliance. The Athenians' attempts to conquer Sicily were not about honoring its alliance commitments or protecting Athenian lives, but adding Sicily to the Athenian alliance orbit.[9] Athenian greed prompted the city-state to invade.

Thucydides did not provide war-fighting instructions or a list of ideas that would immediately help a military commander plan an attack or prepare a defense. He did provide valuable insights about the nature of war and why a nation might go to war. Although the Peloponnesian War was fought over two millennia ago with smaller forces relative to today, Thucydides's writings about that conflict are still relevant. His ideas about realism and idealism, alliances, resources, military capability, balances of power, and national character are all key elements in any decision to go to war.

Sun Tzu: A Master of War

Sun Tzu, one of earliest-recorded writers about war, touched on many of the same issues as Thucydides. Sun Tzu observed war from a different cultural, environmental, and perspective political basis, however, and his treatise *The Art of War* reflects a vision of war quite unlike a Western view. Sun Tzu's goal is to provide advice to potential rulers and generals to follow if they are to successfully wage war. These principles or rules represent a largely strategic approach to warfare. Sun Tzu's broad view of war encompassed diplomatic and economic matters as well as actual war-fighting observations. To him, the concept of war as a political weapon was not trivial.

> War is a matter of vital importance to the State; the province of life and death; the road to survival or ruin. It is mandatory that it be thoroughly studied.[10]

War was to be fought only if there was no other alternative. The most compelling reason to go to war was to preserve the state or to enrich it. The destruction of an enemy's army or capital was not the point; it was to attain those higher objectives alone that the war was fought. War was not simply about the use of military force: it involved the survival of a nation and touched on its physical, political, economic, social, and military health.

All elements of power at the disposal of a ruler and the nation should be used to win a war. Rulers should first try diplomatic means to achieve an objective, then, as a last resort, use a military option. If the ruler turns to military force, then he or she should wage a war that meets the nation's goals with the least bloodshed. The destruction of entire cities and whole populations is not in the interest of the nation; it is better to take a state intact.[11] Similarly, the capture of an enemy army is preferable to its total destruction.[12] A prolonged conflict requires large amounts of national resources. Destroyed cities need to be rebuilt, and significant casualties would drain away agricultural and manufacturing workers which might lead to economic catastrophe for a country. Capturing cities and armies could minimize the disruption caused by conflict. This philosophy permeates Sun Tzu's work. He concentrates on the use of deception, intelligence, and psychological means to outwit and conquer a foe without fighting. His approach emphasizes persuading an enemy to surrender, rather than face a long, bitter, and costly conflict.

Sun Tzu created guidelines for a ruler to consult when developing a plan to wage war. First, an effective leader considers several methods to dissuade or disarm a foe before commencing actual hostilities. The moral and intellectual capabilities of a general or military leader are the decisive factors to win the war. Those leaders who could direct their forces to victory in the shortest possible time, with the least cost and effort and the fewest casualties, were exulted as supreme military thinkers.

Sun Tzu advocated several principles that demonstrate the importance of foresight in leaders. First and foremost, a nation should anticipate an enemy's strategy before fighting begins. If a country can take away a foe's best means of waging a war, it might reconsider any plans to begin a fight. For example, suppose a state relies on a bomber fleet to attack the industrial strength of your nation. You could build strong air-defenses; create an attack force to destroy the threatening bomber fleet; disperse industrial production; create agree-

ments with allies to supply vital goods and services if your industries are destroyed; and find other ways to thwart the enemy's bomber force. These steps could avert a war.

Second, Sun Tzu recommended that a nation disrupt a rival's alliances. If a nation can create dissension within an enemy's alliance, then that enemy may lose confidence that it can muster the necessary resources and support for a war. Potential allies may be discouraged from joining a fight.

Third, attack the enemy's armies. Combat among armies is used only after all other attempts by a nation to dissuade or disarm its enemies fail.

Fourth, and as a last resort, the nation should attack or besiege an enemy's cities. Attacking cities has two flaws: not only does it destroy the aggressors own resources, but if an army corners an enemy that is willing to fight to the death, many soldiers may lose their lives trying to defeat defenders entrenched behind a city's walls. Conquering a destroyed city does not enrich the winning nation, which must expend resources to rebuild the city.

Following Sun Tzu's precepts requires extensive coordination and information before acting against an enemy. Aside from his practical guidance about mounting an attack against the enemy, Sun Tzu considered other sources to aid in a victory. Sun Tzu created a set of general guidelines that a military leader may use to accomplish many of his proposed ideas. These principles of war are based on collected experiences, observations, and thoughts. A military leader should weigh the applicability of those principles of war to the particular situation at hand. If a general followed five conditions, Sun Tzu could predict victory. These conditions are:

He who knows when he can fight and when he cannot will be victorious.

He who understands how to use both large and small forces will be victorious.

He whose ranks are united in purpose will be victorious.

He who is prudent and lies in wait for an enemy who is not, will be victorious.

He whose generals are able and not interfered with by the sovereign will be victorious.[13]

These statements seem obvious at first glance, but they deserve consideration before beginning combat operations. If a commander knows of conditions that can bolster or weaken her capacity to conduct operations, then that leader can better assess her chance of winning a conflict. Similarly, wars are fought at different intensities. This evaluation may lead to different objectives, choice of forces, or logistical planning. Also, if a force can unite under a common purpose, it can sometimes overwhelm a much larger enemy force. There are many examples in military history of a small, organized force defeating a larger foe. Additionally, a prepared military force that can time an attack against an enemy that is disorganized or ill-prepared for combat increases its chance of victory. A surprise attack against an enemy that is not equipped or ready for combat can result in a potential knock out blow for the attacker.

Finally, Sun Tzu believed that a military leader, once given a ruler's orders, must be unencumbered by a sovereign's interference in conducting the war. This is a somewhat controversial and problematic principle. If diplomacy continues after combat begins, then a sovereign must be able to fine-tune military operations to mutually support those efforts.

However, Sun Tzu correctly places responsibility for the conduct of battle and military operations squarely on the shoulders of a general in charge of a war.

Sun Tzu's five dictums reinforce one of his most famous ideas: "Know your enemy, and know yourself."[14] The best weapon available to fight an enemy is knowledge of one's own strengths and weaknesses, and of a potential foe's. A nation might avoid the enemy's strong points and use its own expertise while shielding its vulnerabilities. Sun Tzu stressed that military leaders should match their force's strengths against the enemy's weaknesses to maximize their resources and gain the advantage in war.

Sun Tzu's ideas about surprise and deception assume that a nation possesses appropriate information about the opposition. Intelligence gathering to acquire information that the nation can use before and after hostilities commence becomes a primary mission by necessity. Information can help the nation in its diplomatic maneuvers, in understanding an enemy's strategy, or to sow the seeds of dissension within enemy alliances. Sun Tzu's preferred source of intelligence is spies, whose value lies in providing information before any action is taken to strike or conquer a foe.[15] This information allows the military force to deceive the enemy about their motives, movements, strength, and so on. Deception also allows a ruler to conduct surprise attacks, perhaps the greatest act of deception, to catch an enemy unaware of any planned action.[16] Military leaders should consider at all times the use of surprise military operations. It is a vital component of success in war.

Sun Tzu provides the groundwork to explore other military theorists. This Chinese military author's theories invite exploration and debate. Unfortunately, Sun Tzu does not provide detailed information about how to accomplish certain actions, such as surprise attacks. Perhaps this is appropriate, given Sun Tzu's concentration on the strategic view, the highest level of warfare; his work is timeless.

Niccolò Machiavelli: Linking the State and War

Niccolò Machiavelli was an Italian writer who advised state rulers on a number of topics, from running day-to-day affairs of state to fighting a war. He is better known for his discourses on political thought than for military theory. Machiavelli was active in Florentine politics during the sixteenth century, allowing him to observe firsthand decisions about political and military affairs in Italy. Machiavelli discussed the role of war, the connection between war and citizenry, and whom should fight for the state. These ideas helped provide a foundation for many future military theories about war and the state.

During the period in which Machiavelli wrote, military operations were changing because of the introduction of new technologies and military institutions. For example, artillery provided a way to extend the reach of military operations beyond the point of a spear or sword. Additionally, many campaigns were fought with mercenaries, not national armies raised by conscription or draft. These factors, and others, afforded Machiavelli the opportunity to discuss many military issues that could affect the political stability of a nation-state.

The reasons that a nation might take the field against another varied widely—from religious disagreements to elimination of commercial rivals. War had a simple rationale—

to defeat an enemy on the field was the only way to quickly determine the outcome of a conflict.[17] The decisive battle is a recurrent theme in Machiavelli's works. The importance of a single decisive victory underscores his dictum that a nation's movements and its foe's countermoves must be analyzed before the heat of combat takes over. This requires that a military leader plan his strategy and organize his tactical forces accordingly. An effective leader must know history, geography, and military thought.[18] Machiavelli provided general guidance for the conduct of war. His fascination with the connection between war and the nation's political structure, military institutions and organizations, and other ideas took shape as rules of military strategy. Machiavelli's reader, however, is impressed with the idea that application of his ideas and thoughts depend on the particular situation facing the national or military leader.

A country can fight a war for many reasons, including the desire to improve the status of its leader or the country itself. The nation would naturally seek to expand and extend its prosperity. Through war, a national leader could defeat a neighbor or subdue a rival, which might allow the nation to gain riches, influence, and access to lucrative markets. In this model, war becomes a necessary, even normal, part of conducting the affairs of state.

The nature of war requires the nation to take many risks. To ensure it does not lose, a military commander needs to make many critical decisions. For Machiavelli, only one commander is needed, and that person should be the ruler of the nation. Although a ruler who is unfamiliar with military affairs could delegate those responsibilities to someone else, one person should control the conduct of military operations.

The ultimate defeat of the enemy's forces was attributable to properly motivating an army to fight. Machiavelli noticed that the majority of wars were fought using hired mercenaries. He questioned the effectiveness and loyalty of soldiers who fought only for pay: These men had no motive to fight, except for gold. A nation's reliance on mercenaries was "useless and dangerous."[19] Instead, Machiavelli foresaw a return to the glories of imperial Rome for Italy, in which soldiers were produced from the citizenry, who gave allegiance to the state and not its pocketbook. Control of such an army and its ability to resist enemy conquest and help the state is greatly improved.

A force of motivated soldiers could result, and their passion could create many opportunities for the nation.[20] A nation could lose control of its army, however, if the passion of its soldiers was not focused on national objectives. Troops might loot or disintegrate into a rabble. Proper discipline instilled and maintained through training was Machiavelli's solution for this problem. Order, bordering on cruelty, was not to be off-limits for the ruler.

Passion could also work to a ruler's advantage. A motivated, willing fighting force could stem the tide for a nation if they believed their cause was worth defending. An army's fighting spirit is only as strong as the perceived value of the society it serves. The health of the nation thus relies on the viability of the army, and vice versa. Machiavelli acknowledged this when he states, "There cannot be good laws where there are not good arms, and where there are good arms there must be good laws."[21] The connection between political and military power is made. Future military theorists will expand on this idea.

The institutional differences between mercenary and national armies is important to the organization and fighting of wars. Instead of using mercenaries, a national army composed of its citizens is more loyal, motivated, and willing to fight in a brutal conflict. A national army (composed mostly of a part-time militia), motivated by patriotism, could

carry the nation to ultimate victory. The ruler could, as the leader of his country, unify his army and nation through this process. The integration of military and political goals and objectives is frequently achieved through war and conflict.

Machiavelli provided many ideas about war and conflict for future theorists. His concentration on a single decisive victory would later require extensive planning for the massing of armies and the maneuvering of such large forces. Additionally, the connection between the national leader and government, armies, and the public form a unified force that a country can use to fight a war. Machiavelli stresses the value of an army composed of its own citizens, use of armies to settle conflicts, and a government that must have connections with its military leaders and fighting forces to wage a winning war.[22] This theme is a key element that one of the greatest theorists on war, Carl von Clausewitz, develops more than two hundred years later.

Carl Von Clausewitz: The Father of Classical Military Theory

Carl von Clausewitz witnessed and fought in the Napoleonic Wars under the Prussian and Russian banners against Emperor Napoleon Bonaparte and his French forces for the supremacy of Europe. His military service began in 1792 when, at the age of twelve, he was commissioned into the Prussian Army. During his Prussian service, he was captured and held in Paris in 1806. During his captivity, he was able to observe closely the French military, both its doctrine and its relationship to the state. Clausewitz then fought for the czar of Russia after Prussia entered into an alliance with Napoleon to avoid further conflict. Clausewitz was enraged by this turn of events and chose to serve with the Russians even though he could not speak or write Russian. After Prussia abrogated its alliance with Napoleon, Clausewitz returned to Prussian service and took part in the Waterloo campaign of 1815 that finally rid Europe of Napoleon.

Clausewitz became director of the Prussian War College in 1818, which allowed him to investigate Napoleon's approach to warfare. He synthesized his combat experience, observations about changes in the nature of warfare, earlier writings, and his stay in Paris in his classic treatise, *On War*. Clausewitz completed six books of a planned eight-book series, but died before he could make any revisions (except in his first book) to his great work.

Clausewitz was a witness to how the conduct of war had changed. In the hundred years prior to the French Revolution, monarchies fought their wars using small professional armies. The people were seldom involved in these conflicts. After the French Revolution, wars were fought by mobilized nations that supported the efforts by national armies. The scale of warfare changed as nation-states fought one another for their very existence. Instead of monarchies skirmishing over borders, wars were now fought to spread ideas such as the French Revolution's "Liberté, Egalité, and Fraternité." Patriotic and revolutionary fervor fueled national conscript armies to spread their ideas throughout Europe.

Unlike Sun Tzu, Clausewitz wrote extensively on the purely military aspects of war. Whereas Sun Tzu emphasized the value of diplomatic and other means over military

operations, Clausewitz wrote about other options besides diplomacy and favored the use of other instruments of power to resolve conflicts. Clausewitz also explored concepts about the nature of war and its relationship to the state. Clausewitz considered the affect of the political aspects of war and concentrated on how war was controlled by political objectives.

Clausewitz developed a sophisticated theory about war and fighting. He believed theory's value lay in its ability to help a student organize and develop his ideas on war.[23] A military leader needs "immutable" beliefs about war, coupled with experience and a study of history, to formulate his own ideas about a conflict and how to proceed against an enemy. These universal, immutable ideas or concepts must span all levels and types of war. Clausewitz provides a basis to examine conflict within a broad view of war, which a military leader can apply, using his own judgment, to a military situation.

Clausewitz did not concentrate on a single level of warfare, but looked instead at the entire range of actions that a military could employ. From this he developed the concept of absolute and limited war. Absolute war for Clausewitz was highly idealized, and many factors could light the fires of a total war. In this type of war whole nations used all resources available for the conflict, which frequently involved the very survival of the nation. Conversely, wars could also have limited objectives. These limited wars seemed more likely to occur than absolute war. What influenced nations to advance toward absolute war or stop at limited war? The controlling reason was political objectives.

Clausewitz emphasized that war was not fought for its own purpose but was instead an instrument for political action. In other words, war was fought for political objectives. Whether it was to influence trade routes, alliances, balance of power issues, or other questions, war had a political goal or objective. Clausewitz made this position clear in his most famous quote: "War is merely the continuation of policy by other means."[24] Policy refers here to a course of action that the government takes to affect a particular decision. Political reasons and rationale control the nation's goals and objectives. War is the means, or instrument, that allows one to accomplish those endeavors. This distinction allows a military leader to focus on fighting a war while national leaders guide the overall war effort to meet all of the country's goals. War, by its nature, was designed to force an opponent to bend its will to another. Fighting was just the vehicle to compel another to subordinate its actions to another actor.

Clausewitz also stressed that the military was not the only actor in the conduct of war. He believed that war was affected by many things. The first was one of "primordial violence, hatred, and enmity" that created a "passion" of war. Clausewitz identified this element with the people of a nation, who support the war in several ways: by supplying their labor in factories, serving as soldiers, and sacrificing domestic resources. If a nation could harness its citizens' power effectively, then the country could unite and channel this power into a successful war effort. The second factor is "chance and probability" which allows a nation to innovate, and is most closely associated with the commander and the military. Commanders who can properly apply their military forces to particular situations use their skills in a changing environment to win a conflict. The qualities of a commander and the army are paramount to chance. Commanders can use their "genius" to develop strategy and solve problems. The third concept is "subordination." Here, the government's direction on policy dominates. The commander and the military subordinate their goals and objectives to the government and national leadership.

Commander and the
Military

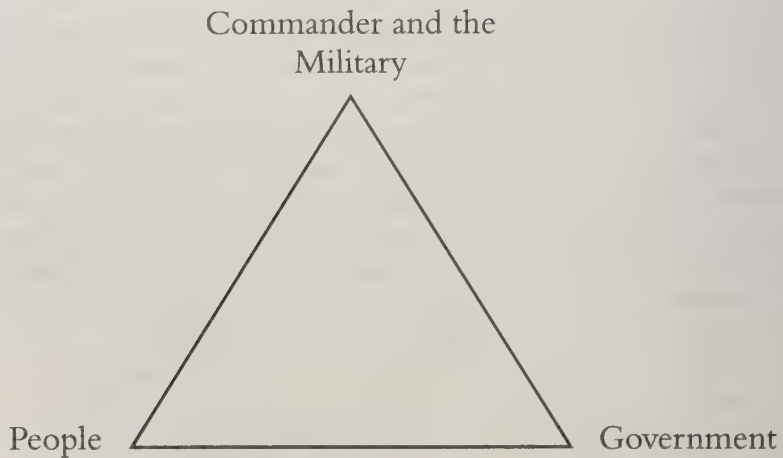People   Government

Figure 2.1   Clausewitz's Trinity

This remarkable trinity (Figure 2.1) provides the military commander the relationship between the key elements of a nation in wartime. Altering one element of the trinity affects the operation and effectiveness of the others. For example, without the support of the people, governments cannot function and the military does not receive the support it requires for a war. Nations can gain great strength from Clausewitz's trinity by enlisting support from each element into an integrated effort. Conversely, an opponent could single out an element to attack an enemy's war-making capability.

This trinity of factors affecting military operations requires careful coordination among these varied interests. Military leaders must create detailed plans of their proposed strategy to ensure that national goals and objectives are met. Unfortunately, the complexities of war may mitigate against a commander getting sufficient information to properly act. A host of other factors can influence combat: enemy forces may not react as anticipated to one's plans, friendly forces could interpret their orders differently than had been intended, and weather could hinder operations. Clausewitz recognized that uncertainty plays a major part in war.

Clausewitz believed that getting useful information was problematic at best. Military officers use intelligence—the collection, analysis, and distribution of information—in a variety of ways. Intelligence is of some value, but Clausewitz did not place much confidence in its use at the higher strategic level because of the difficulty of collecting adequate reliable information. Additionally, Clausewitz understood that even large massed armies of the Napoleonic war moved with relative speed, and such maneuvers devalued intelligence's worth. Instead, he suggested that a military commander compensate for his lack of up-to-date information by using his innate skill, guided by theory, to solve a military problem (i.e., military genius). The commander can also use his military strength to outmuscle an

opponent. A nation could greatly improve its chance of prevailing in war if it quickly mobilized and massed an army.

Clausewitz also accepted that planned events might not occur as scheduled. War and its conduct seldom followed a set of systematic rules. Unplanned actions and results were the norm. Forces or events might shape a different outcome than was planned. In a sense, war was non-linear. Commanders needed to be prepared to fight and adapt to constant change. Clausewitz used the idea of friction to explain unanticipated and seemingly unimportant events that could shape the outcome of war in unpredictable ways. These unintended consequences can become obstacles that a military commander needs to overcome. Friction can originate from internal sources if plans or actions are misinterpreted; enemy actions that can introduce many variables, and environmental conditions such as weather or geography can also play a part in creating friction.[25]

Friction distinguishes "real war from war on paper."[26] Countless small occurrences and influences could change conditions or actions on an individual level, from foot soldiers to military leaders. Only a person familiar with war can understand the true nature and extent of friction and its destructive potential. A military plan that is written in the safety and security of a staff headquarters can quickly dissolve into a complicated action in the field because of friction. Clausewitz recognized this when he states, "Everything in war is simple, but the simplest thing is difficult."[27] Planning is always important, but flexibility is necessary, too. Uncertainty forces military leaders to observe and react to dynamic conditions. Perhaps this is the most central idea about war that transcends all theorists.

The failure to gather information, the role of chance, and friction undermines confidence in detailed advance planning, and places much of the responsibility for success on the shoulders of a military commander. Contending with chance and friction adds to the overall confusion and chaos that characterize war. Unpredictable events, whether caused by man or nature or both, mean less control over a military situation than commanders may desire. The military commander's knowledge, skills, and genius are the means to combat these conditions.

Unlike Sun Tzu, Clausewitz identifies force as the most efficient, effective means to achieve victory in war, and thereby accomplish its ultimate political goal. Fighting a decisive battle in which an enemy's army is destroyed could swiftly defeat the foe and end the war. Clausewitz's challenge to a military leader is to identify the appropriate decisive point to engage the enemy's military forces. The enemy's army and military forces, then, becomes a critical focal point for the military commander. Defeat of the enemy's army will bring about military success and eventual victory.

Commanders of opposing sides who use similar strategies and views of war may become locked into a contest between the minds. Clausewitz characterized such conflicts as a dual between swordsmen. Military genius is an important factor if the enemy is to be defeated by skillful maneuvers or superior planning. If a commander could create a successful countermove to an opponent's every move, then the value of maneuver in warfare is called into question.

Clausewitz recognized the need to provide military commanders with some principles of war. Although he probably would have discouraged a slavish devotion toward their application to particular situations, he would applaud a commander's use of them as appropriate

when he uses his genius to approach a problem. The drive to develop a military leader's ability to solve problems rings as true today as it did in the early nineteenth century. If a leader studies and understands many precepts of military theory, then she might one day develop better and more applicable theories.

If force was the primary determinant to solve a military purpose, then one needs to think about the particular actions that drive one toward victory. Should a commander use aggressive or defensive tactics to defeat the enemy? Clausewitz thought that defensive actions were the superior form of combat because the defender has compact communications lines, prepared positions, and can allow his attacker to exhaust himself. The attacker also has to contend with extended communications and supply lines that makes its operations vulnerable to disruptions. The commander should adopt the use of the defensive as much as possible to achieve his objective. Unfortunately, defenses do not win wars.

For Clausewitz, using a defensive mode of combat did not always mean standing behind barricades and waiting for a foe to attack. The defender could and should exploit any weaknesses exposed by enemy action. This "active defense" allows a commander to observe and take necessary actions to counterattack and potentially strike the enemy at a vulnerable position. If an attacker exhausts himself in the attempt and victory is not forthcoming, then Clausewitz dubbed this the culminating point of victory. These actions let the military commander who has been on the defensive now take the offensive. Conversely, the opposing side moves from the offensive to the defensive, unless it had dealt the enemy a decisive blow. The offensive, then, must still be considered the main method of securing victory over a foe's army. Unless a foe expends all of its energy and resources defending its positions and consequently surrenders, a nation typically is not able to defeat the enemy's army through defensive means alone. Offensive actions using massed force are needed.

Successful offensive actions require attention to certain areas. A commander should consider the use of basic planning to minimize the affect of the lack of information, uncertainty, and friction in war. Complex movements with a mass of forces and the use of surprise were, at a strategic level, hopeless. Simplicity in military operations provides flexibility and ease of understanding between subordinates and commanders. Complex actions contribute to misunderstanding and the so-called fog of war that increase the chance of unintended actions. The commander needs to concentrate, or mass, his forces to defeat the enemy army, which becomes the "center of gravity" for a nation. Centers of gravity are targets that concentrate an opponent's power and determine his capabilities. If a commander can eliminate the army, then she could easily force the enemy to surrender. Defeat of an enemy could mean battlefield annihilation or disarmament through the reduction of its ability to fight. Disarming an enemy would eliminate the possibility of continued aggressive or defensive actions. If the enemy continues to resist, or one cannot defeat its army, the next most important center of gravity is the enemy's capital. As the seat of government, the capital is the administrative nerve center of the country. Clausewitz's ranking of the centers of gravity was significantly different than Sun Tzu's, but for him acted as focal points at which to aim his military forces.

Such concentration of effort allows the commander to focus his attention on the military target and to use all available resources on a singular purpose. These forces might not

include all reserve armies at a commander's disposal, to sustain a campaign. The commander, using a concentrated force, needs to find, deploy, and execute his attack against a key point where the defeat of the enemy could be attained. The commander should also use the element of surprise in an attack, even if surprise may not be planned on the higher strategic levels. Local commanders at the operational and tactical levels might be able to take actions that were not anticipated by the enemy, thereby turning the tide of battle.

Clausewitz provides a different perspective about the nature of war than do previous theorists; for him, the connection between the political rationale and control of a nation's military operations is key. War is not fought in isolation from political authority. Similarly, the idea of a trinity of factors that can affect the conduct of war seems commonsensical, and it provides a framework for a student to explore different options and how each may affect a military operation. For example, some might argue that, during the Vietnam War, the United States demonstrated its military superiority, yet faltered because its domestic support weakened as the conflict dragged on. The North Vietnamese government exploited this weakness by making direct appeals to the American people to protest and resist this "imperialistic" war. The United States was wracked with student protests and growing congressional opposition toward continuing the war. A sitting president eventually did not seek reelection, and morale among American military units fell dramatically. Eventually, the United States sought a negotiated peace with North Vietnam and withdrew from the conflict. The Republic of South Vietnam did not survive as a sovereign nation after its American support evaporated, and it eventually fell to the North Vietnamese. The United States lost the war, its political objectives trampled in the stampede to leave South Vietnam.

Clausewitz's ideas and theories of war still hold true although written during an age of massed infantry and cavalry, centuries before the advent of nuclear weapons, aircraft, modern military technology, and the information age. Clausewitz attempted to explain the essence of war—its rationality. He provided theories, concepts, and observations about war that would give a commander valuable information and ideas to defeat an enemy, or avoid the same. He did, however, recognize that events in the real world often limited this rationality. Friction, chance, lack of intelligence, and passions all conspired to constrain a commander's ability to control the rational conduct of war. War is a fluid activity that has many unknowns as it unfolds, but at its core holds firm purposes about the nature of warfare.

Clausewitz's ideas are considered timeless. Even though he did not write about naval operations, technological advances, or other topics that affect warfare, his ideas about military leadership, the nature of war, and other aspects of military operations have many applications today. Clausewitz's argument that leaders should not blindly follow theory, but adapt it in the proper context, is a vital contribution to military theory. The application of principles and theories of war were not a science as much as an art. Commanders would find themselves as one of the root causes for their success or failure on the battlefield since it was through their direction that theories, principles, and concepts about war were translated into action. This illustrated the importance of understanding and applying theory, not simply memorizing facts or a set of rules without relating them to the conduct of war.

Antoine-Henri Jomini: Contemporary of Clausewitz

Carl von Clausewitz was not the only witness to the Napoleonic Wars who would record his theory of war. Antoine-Henri Jomini was Clausewitz's contemporary who took a different approach to war and, subsequently, military theory. Unlike Clausewitz, Jomini fought with Napoleon's forces in Europe. Jomini was a Swiss citizen who had started off with a career in banking in Paris. In 1805, Jomini entered French military service, joining the staff of Marshal Michel Ney, one of Napoleon's most able commanders. Jomini recorded and analyzed the French campaigns in Italy and the career of Frederick the Great. Napoleon was very impressed with Jomini's work and commented about his ability to define and characterize his system of combat.[28] Eventually, Jomini left French service after some disagreements and later joined the Russian army against Napoleon in 1813. Jomini greatly benefited from working on the staff of one of Napoleon's key commanders and knowing Napoleon himself, as he was able to observe key decisions and the rationale for the actions of the French high command. Jomini continued in Russian service until his death in 1869. He was able to read Clausewitz's *On War,* and published several works of his own, most famous being *The Art of War.*

Jomini's thoughts on the nature of war focused on distilling the essence of his military experience during the Napoleonic Wars into a more generalized view of conflict. He attempted to distill the concepts and theories of war into scientific principles that one could universally apply.[29] If the theory of war had scientific principles, they could not be applied by following a predetermined set of ideas without need of modification on every occasion. Indeed, like Clausewitz, Jomini stressed that war in its application was far from a science, but instead an art that depended on the circumstances of the situation.[30] Jomini did create a "system" of maneuvers that would guide a commander to engage and defeat the enemy.[31]

Jomini, like other authors, first identified reasons why a government would declare war. Many of these causes had been explored by Thucydides, Sun Tzu, and Clausewitz. They reflect a general emphasis on the earlier themes of honor, fear, interest, and gain.

To reclaim certain rights or to defend them;

To protect and maintain the great interests of the state, as commerce, manufactures, or agriculture;

To uphold neighboring states whose existence is necessary either for the safety of the government or the balance of power;

To fulfill the obligations of offensive and defensive alliances;

To propagate political or religious theories, to crush them out, or to defend them;

To increase the influence and power of the state by acquisition of territory;

To defend the threatened independence of the state;

To avenge insulted honor; or,

From a mania for conquest.[32]

A reader can easily discern many recurring themes. Jomini's rationale of when to enter into conflict includes references to activities such as alliances, economic interests, and even religious themes. There was no one particular reason to go to war; similarly, Jomini recognized that the cause of the war would influence the conduct of that conflict. For instance, a single nation might fight against another nation or a whole alliance. Conversely, a nation might have to fight an internal insurrection, a religious war, or join an existing conflict, any of which might devolve into very bloody affairs. These distinctions can alter the character and conduct of a fight.

The impact on a country of these different conflicts varies. National wars, fighting between nations, or a fight to stop an invasion were the most formidable conflicts for the country.[33] The nation must fight against another country's entire population, military, and other capabilities. If a nation is fighting for its very existence, then its determination to resist the concentrated efforts of another nation would make it more difficult for another country to prevail and conquer. Fighting against ideas, compared to an invading army, is very difficult. A civil war or religious wars can be the most difficult to comprehend, and Jomini recognized that fighting against one's own citizenry may result in "deplorable brutality." Jomini could provide little or no advice for a general to use against these types of conflicts. Fighting a guerrilla war was another challenge for the commander. The savagery and brutal nature of a guerrilla war did have potential as a last resort of combat.[34] A people could use a guerrilla war, in combination with a civil war or other hostility to make a potential conflict so costly for an invading force that it could grind its opponent into a war of attrition. If guerrilla forces could sustain their efforts long enough, their opponents might settle for a negotiated peace, averting a country's conquest.

From these divergent causes of war, and the possible implications about fighting such conflicts, Jomini tried to provide a framework to understand the types of war and ways to fight them. A commander had to consider many factors in conflict, not all directly involving combat. The art of war, for Jomini, was composed of five distinct factors: strategy, grand tactics, logistics, tactics of the different arms, and the art of the engineer. These elements provided a scientific methodology for the ultimate aim of supporting a fight. In *The Art of War,* one frequently sees illustrations with geometric shapes that represent movements and positions of units. These images gave rise to the idea that Jomini could solve any problem using scientific principles. This was not his intent. Jomini consistently stressed that scientific principles help military commanders at lower levels of warfare, but at a strategic level, the commander should to use them as guides, not absolutes. Theory can provide an overall perspective for the commander to use when making decisions about the conduct of all military aspects of a war. However, scientific principles work best as ways to solve narrow defined and discrete problems that are unambiguous and have less chance of being

affected by unintended consequences. If Jomini could define war properly, scientific principles and procedure would ease the planning for that conflict.

The Art of War provides many principles of war that a commander may use in a conflict. For Jomini, the most fundamental of these was maneuver. The movement of mass armies against selected targets was a means to concentrate an attacking force or blunt an attack against one's own fortifications or lines of communications. The maneuver of armies to attack with sufficient forces at the appropriate time and location was paramount if a nation was to achieve victory at the least cost. If a commander could combine the use of maneuver and concentration of his forces against a particularly weak enemy point, he could significantly increase his chance for victory. The commander's main focus was to move overwhelming forces against an enemy's most vulnerable defenses, which might be a particular fortification, or perhaps lines of communications that linked an attacking army to its supply source and national leadership. Pitting a friendly force's strengths against an enemy's apparent weaknesses is known as asymmetric warfare, a strategy favored by many American Civil War generals, no doubt inspired by studying Jomini during their military education at West Point. Opposing generals concentrated on maneuvering and gaining position over their opponent's ability to strike at their most vulnerable positions. One can trace the roots of many American Civil War campaigns to Jomini's principle on maneuver.

Jomini concentrated on examining ways to improve a military commander's understanding and fighting ability. One topic that commanders needed to understand was strategy. Jomini considered strategy as "the art of war upon the map."[35] A commander's strategy will dictate the selection of the theater of war and where offensives will occur, establish line positions, maneuver from those positions, setup bases and supply depots, and so on. Making these plans—an enormous undertaking—helps a commander weigh alternatives in the overall conduct of the war. This level of warfare, with its focus on the actual control of forces, seems to be at a more operational level than those espoused by Sun Tzu or Clausewitz. One of the greatest challenges for the commander is to select not only the points of attack, but of defense. One of the key defensive points for any nation was its capital. Like Clausewitz, Jomini believed that a capital was a vital target because it served as a center of gravity, or in Jomini's terms, "objective points," for the nation as its seat of power.[36] This objective point was considered a geographical or physical location. Jomini also conceptualized points of maneuver that depended on the relative position between friendly and "hostile masses." These points of maneuver could help the commander position, move, and attack or defend against an enemy. Jomini thought that the "greatest talent of a general . . . lie[s] in some degree in good choice of these points."[37]

Similarly, grand tactics involve directing forces to ensure that they are maneuvered and put into proper formation for combat operations in accordance with actual battlefield conditions. Jomini does distinguish between grand tactics and strategy. Grand tactics affect operations that extend ten to twelve miles beyond the enemy's frontlines. Grand strategy includes operations well outside this sphere. In the context of Napoleonic warfare, this may have worked for massed ground armies, but today this consideration may be at an even lower level of warfare: the tactical. In the age of horse cavalry and infantry, the movement of forces was still a difficult proposition.

The other elements of strategy have more distinct definitions. Logistics is the capability and practice of moving an army for combat. It includes the transportation, supply, shelter,

and other aspects of providing the means to conduct combat operations. Jomini recognized that an army has different branches that each require unique handling. For example, infantry, cavalry, and artillery all move and fight differently, and require support specific to each branch. The effective use of these disparate parts must be coordinated by the commander. The commander also must be able to overcome or build many types of defensive fortifications. Success on the battlefield requires the use of engineering support for an army.

Clausewitz and Jomini were in general agreement about deception and surprise, but differed about intelligence sources. Jomini thought deception would subvert the main effort of concentrating his military forces against a particular objective point. Deception was considered as merely a secondary action, it was not aimed at supporting the main effort against an enemy's army.

Jomini thought the commander should use intelligence to gather information about an enemy; spies, interrogation of prisoners, and reconnaissance efforts all yield valuable observations for the military. If a commander's staff can gather, consolidate, and analyze information from these different sources, it could significantly affect the placement and operation of forces in a campaign. Jomini believed that large and more numerous military formations of the day might avoid detection with the aid of this intelligence. Reliable, complete information from intelligence-gathering activities allows the military commander to turn a strategy into actual combat or military operations that encountered a minimum of surprises once deployed.

Jomini also recognized that the key to victory centered on the nation's ability to produce good military commanders. The commander needed absolute control of his military forces, with no political interference from national leaders, once hostilities commenced on the battlefield. Jomini did realize that the military commander could not single-handedly win a war. He advocated the use of a general staff to help the commander. Jomini recognized that a commander not only had to demonstrate mastery in the art of war, but that he had to have certain traits, bravery being the most important. The military leader must also have moral, personal, and physical character, knowledge about the principles of war, and a spirit of fairness and generosity.[38] These are traits that can forge the proper temperament for military leadership and the successful application of the art of war to bring about victory.

Clausewitz and Jomini were contemporaries whose writings convey two different visions of war. Clausewitz concentrated on a more philosophical image of war that provided very little direct advice and direction to a military commander. Jomini gave a commander more details to consider when contemplating where to position and how to operate his forces. Jomini's writings were well received in the United States. He became the principal interpreter of Napoleonic strategy, Clausewitz was not widely read until *On War* was translated into English in 1873.[39]

The Rise of Prussian Military Thought

Carl von Clausewitz's genius was not lost on students of European military thought. Unlike the United States, which adopted Jomini's ideas in the nineteenth century, Prussia found much of their military inspiration in Clausewitz. Two of her military thinkers, Helmuth von

Moltke and Alfred von Schlieffen, would shape the direction of many military matters that reached beyond Prussia to affect world events. These two men significantly influenced the development of the Prussian (and subsequent modern German) military, especially its professional officer corps, which had a profound affect on the conduct of World Wars I and II. Moltke and Schlieffen transformed pure Clausewitzian military theory into a practical application for Prussia and Germany to achieve a specific result that created a higher strategy to obtain particular national objectives. The dawn of the industrial age, with its relatively fast trains to move personnel, telegraphs to provide quick and reliable communications, and deadly weapons that could greatly strengthen, or quickly breach, fortifications changed the military focus from the offensive to the defensive model. Moltke and Schlieffen molded the Prussian army to adopt these innovations.

Helmuth von Moltke was the chief of the Prussian general staff from 1857 to 1887. He was instrumental in developing the use of maneuver and offensive methods for his army that resulted in stunning victories over Austria in 1866 and France in 1870. The Prussian military quickly developed into a highly mobilized force that could strike an enemy quickly and continue moving to conduct follow-on attacks. The technical innovations that transformed the military did not make Clausewitz obsolete, indeed, many of Clausewitz's ideas were reinforced by these changes in military capabilities and technology. Moltke adapted existing theory to the situation at hand to seek a successful result. His use of a general staff allowed the Prussian military to create a common foundation of military thought and, eventually, doctrine, or the fundamental guidance to employ military forces, for the Prussian military. Although Moltke was influenced heavily by Clausewitz's military thoughts, he emphasized the philosophy of being able to adapt doctrine to the appropriate situation and conditions facing an army. Moltke would modify Clausewitz's ideas to fit Germany's growing population, the size of its military, political foes, and expanding world industrialization.

Helmuth von Moltke's influence was great among German military officers, not only because of his position, but his ideas as well. Unfortunately, few written documents have survived that recorded Moltke's thoughts on theory or opinions except for a series of memoranda to his staff and field organizations. In spite of that, his application of military thought to real world problems facing Prussia and eventually Germany is classic military theory and continues to be studied. Prussia was a relatively small state in comparison to its main threats, France and Russia. Its size and how it affected its ability to raise an army required many changes in the way the Prussians would fight in the future. Moltke and Prussia were also faced with a difficult problem of potentially fighting a simultaneous two-front war. Russia was on its eastern border, while France anchored its western one. If France and Russia decided to strike Prussia in a coordinated attack, the nation could be split in half.

Moltke observed that defending the nation required a unique sequence of events to occur. Maintaining a relatively large standing military force is expensive. Keeping a large reserve, assuming they were adequately trained, was a potential solution, but it needed to be mobilized and transported to a proper location in a timely manner. Moltke advocated the use of large-scale national mobilizations during times of impending crisis: for example, commandeering railways that could move forces rapidly from one location to the next. All

of these movements required intensive coordination. Likewise, the general staff could maintain contact with its field commanders by telegraph. Technology, of course, also helped defensive forces. The Clauswitzian dictum that the defense, rather than the offense, was the stronger position was reinforced with the introduction of rapid-fire rifles and artillery. Commanders who ordered frontal assaults against prepared fortifications succeeded in nothing more than forcing one's own soldiers to commit suicide and wasted their limited military capability.

Moltke had to adapt many of Clausewitz's ideas because of technology. He suggested that Prussian forces could take the offensive to achieve a decisive victory, but he introduced a new concept to replace a massive frontal assault. If a commander could maneuver his forces skillfully and surround the enemy, then the enemy might easily be cut off from its lines of communications and defeated. The concept of using an envelopment from two to three directions at once to surround and cut off fixed fortifications was the epitome of strategic ability,[40] and lifted the art of the offensive to new levels. (The offensive forces must ensure that their own lines of communications are kept open to avoid a fate similar to those they surrounded.) Enemy forces would be deprived of guidance, supplies, and reinforcements. These movements breathed new life into the possibility of small nations succeeding by offensive means against numerically superior opponents.

Moltke's theories about war incorporated many of Clausewitz's ideas. For example, he believed war was a continuation of national policy, and military strategy must reinforce the political aims and objectives of the nation. The commander must focus on the political outcome of the military action. However, Moltke was concerned that political leaders might interfere with military operations, and believed they should not do so unless the political goal or objective was at stake. A military commander would have a better understanding than the political leader would of the advisability of changing military operations. Military commanders possess a better understanding of war in its practical form. The single purpose of war was to create a peace under conditions favorable to the nation.[41] Political leaders set the conditions; military leaders ensure that the war succeeds on the battlefield.

The nation's generals were charged with the development of a strategy to prepare an army to achieve those goals.[42] The corresponding part of strategy was the application of those forces in combat to break the will or ability of an enemy to fight. The enemy's actions, the environment, accidents, and other events that a commander cannot foresee could certainly alter any carefully laid plans. Because of the fluid nature of warfare, the commander must apply his knowledge, experience, and military skills to adapt strategy and use his forces carefully. These actions significantly reduce the value of fixed doctrine or strategies. A commander must be able to tailor his decisions as new situations dictate. Moltke considered strategy as "a system of expedients."[43] Strategy then became an "art" that required the commander to use his life experience to make actions practical; changing the strategy or idea in the face of dynamic conditions; and making decisions about war under the pressure of combat and war.

The overall military strategy could control the overall operation of these forces, but it was inadvisable and impractical to adhere too rigidly to high-command decisions made before a battle had begun. Although the telegraph could keep commanders in contact with

their respective headquarters, the fluid nature of battle required quick, decisive action that only the field commander could provide. Instead, field commanders should be issued general guidance and allowed to modify them to the situations they faced.[44] Moltke supported the idea that subordinates supply the details and execute military plans. Essentially, he advocated centralized command and decentralized execution: overall direction or command from national leadership but action taken by field or subordinate commanders.

Alfred von Schlieffen later replaced Moltke and served as the head of the German general staff from 1891 to 1906. He was chiefly concerned by the strategic situation Germany was placed in—a two-front war against the numerically superior land forces of France and Russia. Although Germany had formed an alliance with Russia, Schlieffen considered the question of staying on a defensive, or using offensive power. Germany could rely on a strategy of attrition or one of annihilation. Schlieffen favored a policy of maneuver to quickly annihilate a foe. He expanded on Moltke's ideas and eventually planned a strategy to conquer France that was, in most respects, used by Germany (Prussia and other Germanic states that had unified in 1888) in World Wars I and II. He turned many of Moltke's theories into an operational plan for Germany.

Although France was the smaller of Germany's two potential foes, it was considered the most dangerous. French military forces were better concentrated, fortified, and armed than the Russians were. Railroads could rapidly concentrate French forces among fortifications or facilitate an attack against Germany. Additionally, the modern armaments used by the French could provide a deadly obstacle to overcome if they were used in a defensive struggle. Schlieffen proposed that Germany first knock out France in six weeks through envelopment (a tactical maneuver to surround the enemy) and the capture of Paris. The German army could then regroup and attack Russia. However, Schlieffen needed to address how Germany should attack against heavily defended positions. He proposed that Germany should maneuver its forces, not through French fortifications, but via neutral Belgium. If the French concentrated on the German border, a sweep through Belgium would envelop these forces and cut their lines of communications with the rest of France. Attacking through a neutral country had serious political implications, potentially expanding the war and making Germany's perpetration of war on a neutral party hard to defend as policy. Other nations then might lend support to France. Schlieffen mostly ignored these concerns.

The Schlieffen plan, as this strategy became known, made bold use of many of the ideas advocated by Moltke, but was not the only approach considered against France or Russia. Schlieffen developed a series of strategic models adapted for different conditions. However, the Schlieffen plan was the most famous and eventually was used against France, in various forms, during World Wars I and II. An offensive was designed to destroy the enemy through maneuvering a massed force against an exposed flank or side of a foe in a large battle. Unfortunately, if war was meant to support a political objective, the Schlieffen plan might unintentionally widen the conflict. Attacking through a neutral country might expand the war by threatening other nations, such as Great Britain. Although Clausewitz's theme of a decisive battle was evident in the Schlieffen plan, the German military would require extensive logistical support for its success. Once on French soil, the German forces could themselves be vulnerable to becoming isolated from their own lines of commu-

nications by a counterattack. Additionally, their rapid mobility required capture and operation of French railways or other means of transportation.

The army was not the only German military force desiring to expand. The German navy was in a naval arms-race with Britain. Germany's desire to expand its colonies required a fleet similar to those of Britain or France. Using ideas from Clausewitz and Moltke, Schlieffen concentrated on the landpower aspects of military force. He did not consider the potential use of the German navy to isolate France from outside support or other aid, the joint use of different military capabilities to defeat France. Also, German allies, such as Austria-Hungary, were not even considered in the plan. Only the German army would participate in the conquest of France. Schlieffen planned for the worst-case situations by relying on his land forces only that he directly controlled as chief of the general staff.

The Schlieffen plan was, curiously, based on an assumption that scheduled activities would occur without problems; Clausewitz's theories about friction seemed to have been ignored. The Schlieffen plan was a series of great wheeled movements composed of massive ground formations that marched or used railways to move men and material to surround French forces. The complexity and timing of the advance required great coordination. Schlieffen believed that by taking the offensive and seizing the initiative, and throwing the enemy off-balance by an attack against its flanks, the enemy would take certain actions.[45] The uncertainty of enemy action, or friction, is reduced by taking control of a situation, instead of leaving it open to a foe. There were several critics of the plan within the German army. For example, some worried that a preset battle plan took away any initiative that a German general might need to counter any unexpected moves by the enemy. Others questioned discounting the use of a frontal attack.

The adaptation of Clausewitz's ideas to Germany's military situation was precipitated by a change in technology. The introduction of rapid-fire rifles, accurate artillery, railways, telegraphs, barbed wire, machine guns, and other devices transformed strategies to take advantage or avoid these weapons. The art of war was transformed by the science of technology. Commanders had to adapt and evolve their strategic thought, but the basic ideas of Clausewitz survived and flourished.

T. E. Lawrence and Guerrilla Warfare

Fighting a war against armed civilians in cities or the countryside has plagued military commanders for centuries. Jomini was especially concerned about civil wars or uprisings because they could be particularly bloody. Revolutionaries who used deception to blend into the local populace created many problems for a conventionally armed military force. A commander could face attacks from any quarter and would have to expend more resources guarding fixed locations. More important, those forces might not meet their enemy in a decisive battle, as most conventional military leaders might prefer; they would melt away into the countryside to fight another day. A nation that is too weak to meet another on the battlefield may resort to this type of warfare. Unfortunately, a state's response to this kind of warfare is usually brutal and repressive, and could result in a long terrible conflict.

Thomas Edward Lawrence, known more popularly as Lawrence of Arabia, was an English expert on Near Eastern archeology who served as an army officer in North Africa and Arabia during World War I. The Royal Army specifically chose him to serve in that region because of his Oxford education and knowledge of the Middle East region. He was assigned as an intelligence officer in Cairo, Egypt. One of Lawrence's first jobs was to help instigate and organize a revolt of Arab forces in the area of what is now Saudi Arabia in 1916. Lawrence organized and trained irregular Arab forces to fight the Ottoman Turkish forces who had occupied much of the Near East and who were also allied with the German forces in World War I. Lawrence developed a guerrilla force that attacked Turkish forces, positions, and lines of communications throughout the region and was able to escape capture by retreating into the desert. These guerrilla forces capitalized on their rapid mobility and ability to mix within the local populace to avoid detection. Lawrence's experience in the desert was an essential element of Britain's World War I's Middle East campaign and illustrated the value of guerrilla warfare.

The first coherent theory on guerrilla warfare was presented by Lawrence in *The Seven Pillars of Wisdom* (1926).[46] Lawrence believed that guerrilla, or irregular, forces could hide or stay inactive among a much larger, powerful opponent. The guerrilla force could use stealth and rapid mobility to strike at an opponent's lines of communications or other points of weakness, such as isolated positions, supply lines, transportation, encampments, or other rear areas. The guerrilla forces should avoid any direct attack against an enemy; if not, a regular army might destroy the guerrilla force or counterattack the smaller force with reinforcements. These guerrilla forces should attack the regular army through harassing or limited strikes only.

These forces were limited in their armaments and resources. Lawrence drew support from sympathetic Arab cities and populations. He also received financial aid and weapons from the British military forces assigned to the Near East. This allowed the guerrilla forces to reduce the vulnerability of their support forces and supply lines to enemy attack. Lawrence believed that a revolutionary or guerrilla base had to be "unassailable" from an actual or threatened attack.[47] The Arab forces used several bases: Red Sea ports, the desert, and a psychological weapon—the minds of the populace. A guerrilla movement needed a sympathetic population that would not only give it logistical support, but be willing to fight with them. Lawrence believed a relatively small guerrilla force was capable of defeating a much larger, better equipped enemy force.

Lawrence favored using a guerrilla movement as his weapon in Arabia for several reasons. The Turkish army followed the prevalent European idea of seeking a decisive battle to win a war. An Arab guerrilla force would avoid it. Lawrence estimated that the Ottoman Turks would need an army of at least 600,000 to counter his guerrilla force of only 100,000 men.[48] Additionally, the Arab forces were not capable of forming a conventional army because of limited resources and timing. If the Arabs did form a regular or conventional army, heavy losses would probably cause the disintegration of their revolt and an end to their political objectives. Isolating Turkish forces in large cities while controlling the desert would restrict their movements.[49]

The war, waged by the Arab forces advised by Lawrence, was a curious mixture. Fighting against the Turkish state, with British aid, was a force of nonstate, diverse Arab tribes

who were fighting against one state that controlled its lands; it was at its heart a revolt. Warfare fought by a nonstate actor for political purposes is not new. The initial stages of the American Revolutionary War is an example of how irregular forces used hit-and-run tactics and selected set-piece battles to strike at a regular army. Revolutionary warfare became an act in which political power was seized by armed force.[50] Nevertheless, these tribes had various motives for fighting the Turks. Lawrence's own vision was to develop an Arab-speaking state with a capital in Damascus in present day Syria. This state would have, he hoped, a strong bias toward Britain and eventually become a British Commonwealth nation.[51]

Revolutionary warfare, because of its lack of resources, requires extensive planning and careful preparation. The revolutionary force's ability to eventually sap the strength of, normally, a larger foe depends on its ability to move rapidly with little possibility of detection. This movement must allow the forces to strike and then retreat into a friendly countryside or urban area of sympathetic supporters. This requires accurate, timely information about the movement of a foe, secure support by a population, dedicated revolutionary forces willing to fight a protracted war, and methods to ensure the enemy is weakened and isolated psychologically. For example, Lawrence's most famous trademark was his ability to move undetected throughout the desert, hit a target, and then vanish. His Arab forces used horses and camels, which required minimal logistical support. Additionally, Lawrence successfully hindered Turkish forces from traversing the desert by attacking the few railways that crossed the Arabian sands that the Turkish forces depended on. They also ambushed any available enemy transport columns, motorized or not. This allowed the Arab forces to isolate Turkish forces in cities, and took the initiative away from the Ottoman Empire. These actions would reduce morale and sever communications between deployed Turkish forces.

Lawrence realized that the war would be won using algebraic, biological, and psychological factors. As mentioned earlier, the Turkish army would require hundreds of thousands of personnel to defend its Arabian territory against guerrillas. They did not have the forces to police fixed sites and create counterguerrilla forces to search for Lawrence's highly mobile military forces. Next was the consideration of "humanity in battle." Leaders need to remember when fighting a guerrillas war that a key objective for the force is not the destruction a large enemy force, because it may inadvertently increase its own casualties, but it should target instead the enemy's material resources. That idea evolved into the destruction of railways and bridges to isolate forces from their supplies and reserves, not to destroy the enemy. Lastly, psychological considerations are important. Morale and spirit are vital to sustain public support for guerilla forces. Propaganda, or use of the media, is one of the greatest weapons for a commander.[52] Lawrence used every method at his disposal to plan his campaign.

T.E. Lawrence was one of the few military theorists to record his thoughts on revolutionary warfare. He adapted several elements of modern weapons technology for forces still using centuries-old methods of fighting. Lawrence adapted the telegraph, machine gun, armored cars, and other weapons to chip away at a modern army without a decisive battle during his campaigns. The end of the Turkish Ottoman Empire's Arabian territories came from a number of pitched battles between British and Turkish conventional forces, but it was greatly aided by Lawrence of Arabia's guerilla warfare.

Mao Ze-Dong and Revolutionary Warfare

Mao Ze-Dong was a leader of the communist side during the Chinese Civil War, a commander of Chinese guerrilla forces against the Imperial Japanese occupation in World War II, and the conductor of the movement to oust nationalist forces from mainland China after the war. He developed and used many concepts of revolutionary warfare that were quite different from Lawrence's precepts or previous revolutionary movements to defeat his foes. Instead of concentrating on military actions, Mao was more interested in the political effects on the population, the masses. Mao, like Lawrence, believed a relatively small guerrilla force, with adequate support from the masses, could undermine a foe's large conventional military force.

The North Vietnamese and the Viet Cong, their supporters in South Vietnam, would use many of the principles developed and practiced by Mao in China to great success in their war with the United States in the 1960s to 1970s. Mao's ideas on revolutionary warfare took on almost biblical proportions among guerrilla leaders and their followers throughout the world. Conventionally armed and trained militaries that had previously used Clausewitzian and Jominian ideals had difficulty fighting this new threat effectively.

Mao adapted many of the precepts of war to satisfy his goal of changing China's social order. To him, war was the highest form of conflict to solve problems between classes, nations, states, or political groups since "the emergence of private property and of classes."[53] War was a means to settle class struggle and effect a needed social revolution. A military force's true objective was not to defeat another army in a single pitched battle, but to condition the masses for political change. This focus was clear when he proclaimed:

> The seizure of power by armed force, the settlement of the issue by war, is the central task and the highest form of revolution. This Marxist–Leninist principle of revolution holds good universally, for China and for all other countries.[54]

Mao stressed that guerrilla forces must always avoid the process of encirclement and suppression by its opponents. The one basic military principle that Mao stressed was to preserve one's own strength first, then destroy the enemy's.[55] Mobility therefore became an essential part of the war. Moving military assets allowed the guerrilla forces to position themselves to fight the enemy wherever and whenever they had an advantage, or to avoid battle. However, guerrilla forces must be aware of conditions that allow it to take the offensive against its enemy. Guerrilla warfare could continue only if it had the support of the people. Mao developed a theory of the relationship between a guerrilla force and the political and social environment in which it fought. These theories on guerrilla warfare would eventually be used in many trouble spots around the globe with some success. These guerrilla movements would spread from China to Latin America and elsewhere; as the twentieth century progressed, fighting these movements sapped the resources of many nations.

The main source of help for any conflict involved securing aid from the masses. A relatively weak irregular army required support from the local population and getting that support was a political, not a military, objective. Mao's theories on warfare reflect the primacy of the political good over any military concerns.[56] To establish this common theme,

Mao required that his guerilla forces be above reproach in their conduct and actions dealing with the Chinese people. Strict adherence to discipline, avoidance of any indication of abuse toward the population, and fair treatment of all were salient points in Mao's theoretical treatment of the masses.[57]

In Mao's model, the masses were the key to the war's outcome. They were the source for supplies, soldiers, and information, and protected the ability of guerrilla forces to operate in the countryside or urban areas unhindered. The responsible actions of a guerrilla army and the savvy use of propaganda could improve the relationship between the guerrillas and the population significantly (both domestically and internationally). Turning the popular view against the government and capitalizing on that discontent was a major step toward aligning the population with the revolutionary movement. What is more, actions taken by an opposing force against the masses could generate more support for the guerrilla forces and less for those of an opposing force. Hit-and-run tactics that cause the opposing force to strike out indiscriminately could incite popular discontent among the population. Political power would then flow to the guerrilla force; it, however, should practice discipline and not become a renegade force without purpose.

For Mao, gaining the political advantage over an opponent was the foremost consideration and he could achieve this through force. He believed that "power grows from the barrel of a gun."[58] Military power had a purpose, a political one. The Communist Party would control the gun and use it as military power for the people. State power would become military power. The state would use its power to further the revolution, even if it meant war. Although war was abhorrent, it was necessary to create a Marxist state. Once this state was created, war would become obsolete; until then, "war can only be abolished through war, and in order to get rid of the gun it is necessary to take up the gun."[59]

War, for Mao, was conducted in phases. Once popular support was achieved, a guerrilla force could conduct a three-phased campaign against an enemy. The first phase was composed of conducting small-scale attacks that would demoralize and sap the strength of a foe. These hit-and-run attacks would be aided by the masses because the guerrillas could quickly strike and then blend into the local population undetected. These kinds of attacks allowed a much smaller army to contest control of the population and selected areas. The second phase of the campaign was to create a geographic base of operations in a region of the country inaccessible to the opposing force. This would allow the guerrilla force to strengthen themselves while continuing to strike against the enemy via harassing attacks, and continued recruitment of members. Once the guerrilla forces were strengthened and the enemy weakened, open, or conventional, forces would commence an attack. The guerrilla forces would turn from ambush to fighting the enemy with conventional infantry and armor tactics and strategy. A sufficiently strong force could cause the enemy to retreat. The exact timing and conditions of moving from one phase to the next was a question for the commander to answer.

Mao faced many different combat conditions in China. After supporting the withdrawal of Japanese forces from China in World War II, he moved toward the internal struggle within China. His fight was not between a nation-state and his own communist forces, but rather a rival national force. He was in favor of pushing foreign powers out of China, but his main target was, in his eyes, a corrupt nationalist Chinese government that had created harsh conditions for the peasantry. Mao fought mostly in the countryside so he

could mobilize the strength of the peasantry. Because he fought with few resources, Mao used the geographic size of China to his advantage. Instead of fighting a single pitched battle, he used time and space as an ally. Mao could retreat into the countryside and choose his attacks at his own convenience. Additionally, he could whittle down the strength of his enemy slowly through attrition over the length and breadth of China. The enemy would exhaust itself fighting a long, bloody war.[60]

Fighting an enemy did not rely solely on popular support; it also required operation within the confines of a population. Mao's basic ideas about guerrilla warfare can be summarized as:

Divide our forces to arouse the masses, concentrate our forces to deal with the enemy.

The enemy advances, we retreat; the enemy camps, we harass; the enemy tires, we attack; the enemy retreats, we pursue.

To extend stable base areas, employ the policy of advancing in waves; when pursued by a powerful enemy, employ the policy of circling around.

Arouse the largest numbers of the masses in the shortest possible time and by the best possible methods.

These tactics are just like casting a net; at any moment we should be able to cast it or draw it in. We cast it wide to win over the masses and draw it in to deal with the enemy.[61]

Guerrilla tactics allowed weaker military groups to capitalize on strengths that they would not have been able to use in a conventional struggle against a foe that had greater military capabilities. A basic tactic was to avoid the strength of the enemy and position forces where one's own forces can take advantage of terrain and political conditions among the local populace. Strategic retreat avoided defeat of the guerrilla force. The only way to defeat such an army was its complete destruction. If the guerrilla forces could maintain a secure, remote base and never expose its entire force to enemy attack, Mao believed that a "defeat" would be temporary only and incomplete. The Chinese communist guerrilla forces did use wars of annihilation through encirclements and outflanking of their opponents. Their objective was to capture war material as a means of strengthening their own forces while smashing their enemy,[62] because the guerrillas did not have the resources to produce or purchase their own weaponry. They had to avoid an enemy's ability to encircle their own forces and isolate them.

A challenge for the military commander is deciding when a strategy of hit-and-run attacks should give way to a more conventional war. The commander must recognize an opportunity to attack with a more conventional force and respond. The movement from a defensive posture to an offensive action requires precise timing and information. An opponent's financial and military strength, according to Mao, would weaken as it fights a long, costly guerrilla war. The enemy's population will become disenchanted and its military forces will become demoralized. The guerrilla force will benefit through increased support

of the people; the agrarian economy should improve and small industry flourish; and international support will provide further capability to launch a counteroffensive. Two conditions are necessary for this stage to occur: increased dissension within the enemy's country and international support. These conditions are satisfied through the dual political means of propaganda and diplomacy.[63]

Guerrilla movements must be able to exploit information to support their cause by highlighting the concerns of the populace, transgressions against the people by the government, or how the revolutionary movement supports the people. Similarly, the use of diplomatic actions can place international pressure on a foe by gaining support for the revolution among other nations. These nations can aid the movement through aid or political support.

Undoubtedly, Mao Ze-Dong had a great influence on military thought in the twentieth century. His views of warfare were adopted by many guerrilla and revolutionary movements in the last half of the twentieth century. A student of military art and science can recognize many of his ideas, especially the three-phased campaign, as used by North Vietnamese and Viet Cong forces against the United States in the Vietnam war. Although successful, guerrilla warfare had its limits. If a revolutionary movement had no popular support, remote bases, nor international support, then its chances of prevailing through armed conflict were slim. Counterinsurgency and special forces could also take the fight to guerrilla forces away from its support—the masses or its remote bases. However, guerrilla movements have become a fighting force to be reckoned with in the future.

Giulio Douhet: The First Airpower Theory

General Giulio Douhet developed one of the earliest and most influential airpower theories. Douhet, an Italian army officer, was influenced by Italy's airpower experience in her colonial and World War I campaigns. Although not a pilot, Douhet took command of an airplane battalion in the Italian army in 1912. His airpower theory was explained in *The Command of the Air,* written in 1921 and revised in 1927. Douhet's ideas greatly affected leaders of the United States Army Air Corps. Ultimately, Giulio Douhet's theories were extensively studied and then modified by the Air Corp's prestigious Air Corps Tactical School (ACTS). ACTS graduates became the leaders of the future United States Air Force (USAF), and their experience in ACTS significantly affected many key decisions made during and after World War II. ACTS was the intellectual center for the fledgling Air Corps and exerted significant influence in the Air Corps and USAF for many years.

Douhet's main thesis was that airpower, through carefully planned long-range bombardment, could devastate a nation and render the use of a ground war moot. An important prerequisite of Douhet's theory was the command of the air, or what is known today as air superiority. A nation's aircraft had to be able to attack at will while denying an enemy's air force the opportunity to conduct similar attacks. The air force had to either destroy or disable its enemy's ability to fly to secure access to bombing targets. Similarly, the enemy could not bomb a friendly nation if it did not control access to the air. A nation's aircraft could attack enemy planes in the air, on the ground, or in "production centers." However, attacking aircraft on the ground was Douhet's preferred method of establishing

control of the air. Land and naval forces were still a necessary part of a war—conquered nations needed to be occupied or sea-lanes for supplies and communications patrolled. Technological advances challenged the primacy of the land and naval forces, whereas air-power ascended into a dominant role. Douhet believed that an "adequate aerial force" without need of land or naval weapons could only destroy an enemy's air force.[64] Before aircraft could conduct any operations, a nation needed to establish command of the air; this objective was so important Douhet ascribed its attainment as the first step toward maintaining the national defense.

Once command of the air is achieved, an air force may bomb an enemy's vital centers of government, industry, and population. Hindering a nation's ability to wage war is important, and Douhet made no distinction between combatants and noncombatants. The total mobilization of entire nation's populations, economies, industry, and society to fight in World War I illustrated the difficulty of discriminating between a soldier on the front, a production worker manufacturing small arms, or a banker financing the war effort. A poten-tial weak link in the total mobilization effort was civilian morale. The relationship between civilian morale and ending a conflict was the key to Douhet's theory of airpower.

Unlike the soldier on the front steeled by combat, civilian morale was fragile and very unstable. If a nation could bomb production centers, cities, homes, and other areas where civilians congregated, then their morale would soon wane. The disenchanted civilians would demonstrate against the war and force their government to capitulate. To hasten the destruction of civilian morale, Douhet advocated that an air force use any means available to inflict damage on the enemy. This included the possible use of explosive, incendiary, and poison-gas weapons. Douhet thought a combination of these weapons would create a syn-ergistic effect, lowering civilian morale even more. Germany's first attempts in World War I to use primitive strategic bombers and zeppelin airships to attack London inspired Douhet about the possibilities of winning a war by breaking a populace's will. The German raids against Britain produced no conclusive evidence about shattering the enemy' will. Addi-tionally, Douhet's advocacy of a massive first strike against the enemy underscored his sup-port for the offensive use of airpower. The newly developed aircraft's speed and range would allow the nation's air force to conduct massive bombardment campaigns and render ground and naval forces useless. The aircraft's speed and altitude also made defense against an offensive aerial attack difficult.

Douhet's ideas were developed in the context of the horrors suffered in World War I. On July 1, 1916, the British army suffered 20,000 deaths and 40,000 wounded during the Battle of the Somme. German losses that day were over 6,000 killed and wounded. The ten-month Battle of Verdun ended with over 377,000 French and 337,000 German deaths. To Douhet, aerial bombardment of cities with relatively fewer, albeit civilian, deaths would be more humane than the slaughter in the trenches. He reasoned that aerial warfare, under command of an airman, was less destructive than previous modes of combat. Aircraft put under the command of ground or naval leaders inevitably would play a secondary role, such as reconnaissance, which would not take full advantage of its capabilities: The full potential of aerial warfare would not be realized; and the horrors of trench warfare would remain. Air power needed an independent role in future wars, and not one subordinated to either the army or the navy. An independent air force, organized to conduct long-range bombardment at a moment's notice, was the only answer.

The air force needed only two types of aircraft: "battleplanes" and reconnaissance aircraft. Douhet believed that an air force should be composed mostly of battleplanes. These aircraft would have self-defense armaments sufficient to protect themselves from enemy aircraft attack, and then bomb enemy targets. These aircraft could act as defensive fighters and bombers at the same time, but were designed to support their bombing mission first. There was no need for a specialized interceptor or attack aircraft with the deployment of the battleplane: it could attack from any direction against an enemy. The unlimited environment of the air made ground and aerial defense against bombing missions nearly impossible to detect, plan, or defend against. Seeking air-to-air combat was pointless for either the stronger or weaker air force.

Reconnaissance aircraft were used to gather information to "keep from being surprised by the enemy."[65] These aircrafts' best weapon was speed. They could detect enemy preparations for war and provide information that would later be transformed into targets for battleplanes. Although reconnaissance missions were valuable, the main type of aircraft that an independent air force should adopt was clearly the battleplane. All others were merely ancillary aircraft that detracted from the main purpose of the air force: strategic bombardment.

Giulio Douhet's theory on airpower can be summed up by his statement:

> To conquer the command of the air means victory: to be beaten in the air means defeat and acceptance of whatever terms the enemy may be pleased to impose.[66]

Although much has been written about Douhet's thoughts on breaking the will and morale of civilian populations via bombardment, command of the air was the key to carrying out the destruction of cities. In Douhet's eyes, the command of the air allowed an air force to accomplish total victory against its enemy in a short period of time relative to the ponderous land campaigns of the past. Today, the prospect of deliberately bombing innocent civilians is repulsive. The idea, however, was that an independent air force should attack targets of national significance, not just civilians. Douhet speculated that an aerial attack conducted in a single day against "governing bodies, banks, other public services" might plunge Rome's population into a state of terror,[67] which Douhet believed might end the war. The air force could create more problems for a city if it also destroyed or disabled rails, telegraph, telephone, and radio communications. Douhet's list of possible targets was the first recognition of what an air force bombardment campaign should attack to inflict the most damage to the well-being of a nation.

Douhet's ideas about an independent air force, victory through the exclusive use of airpower, and command of the air would soon attract many adherents and advocates. Early aviation technology allowed Giulio Douhet to peek into the future and develop his ideas about aerial warfare. Airpower was in its infancy; as technology advanced, many advocates expanded of Douhet's themes. Some of Douhet's ideas would be proved in combat during World War II; other ideas resulted in tragic consequences for opposing forces and enemy populations during that war.

Douhet's theories about airpower had several limitations. Douhet advocated a war against civilians (barring the use of poison gas and incendiary weapons) to break the will of a population. He also makes several assumptions that may not appear reasonable today.

Douhet saw the public's morale as fragile and easily broken by aerial bombardment, and concludes that the demoralized population will put pressure on its government to end the war. This action assumes that the government will listen to the population, but totalitarian or autocratic regimes may not. Additionally, populations have proved remarkably resilient to military attacks. There are many examples in military history, including the American Civil War, of cities that were put under siege, and the population's will did not crumble. Another potential problem is the assumption that the airplane or battleplane will break through enemy defenses unscathed and defeat the nation. Douhet did not credit advancing technology enough to anticipate the refinement of defensive weapons, such as high-speed aircraft interceptors, radar, or antiaircraft missiles. Arguably, Douhet's theory would work on nations that have large cities or industrial targets, but would his ideas be appropriate for a war against an insurgency with guerrilla forces or an agrarian society? A nation's defeat through airpower was seen as almost universal; there was little attention paid to a nation's size or the type of conflict because war, in Douhet's opinion, was total.

Despite these limitations, Douhet did write the first comprehensive theory of airpower that helped inspire others to develop their own theories. Giulio Douhet's work was a starting place for many airmen who attempted to carve an independent air force out of their land and naval services. The push to define and legitimize national air forces was given momentum by General Douhet that carried into the post–World War II era.

Billy Mitchell: America's First Airpower Theorist

William "Billy" Mitchell was a combat-experienced aviator in the U.S. Army who wrote about the use of airpower and its future application in war. He was the son of a U.S. senator and joined the army during the Spanish-American War. Mitchell was an airpower zealot who commanded American combat aviation on the western front during World War I. He later became assistant director of the army's Air Service after the war. Mitchell's name made many newspapers' headlines when he used Air Service bombers to demonstrate that these aircraft could sink captured German battleships. These experiments showed that the battleship was not invulnerable to air attacks and that aircraft could defend the coasts as effectively as army coastal defense artillery units or a navy battleship against an enemy fleet. He continued to press his case within the army and to the public. However, because of his vehement advocacy for an independent role of airpower and charges that naval officers were criminally responsible for an airship disaster, Mitchell was later court-martialed and resigned his commission.

Mitchell was not known as an originator of military theory; instead, he borrowed heavily from existing concepts (e.g., Douhet's and others) and applied his experiences from World War I. He knew that only countries that are "air-minded" could support an air force fully. Mitchell believed that an autonomous air force, equal in status to the army and navy, could conduct long-range bombardment against vital centers of an enemy without engaging its land or naval forces. He was adamant that an airman must command this independent air force, and that all aviation resources, including naval aircraft, be controlled by this independent air force. The country then should organize the three separate services

into a unified department of defense, but Mitchell believed that airpower would dominate both land and naval forces.

Although Mitchell's ideas appear similar to Douhet's, he did differ greatly from the Italian general in several areas. Mitchell believed in using aerial long-range bombardment against an opposing nation's industry and its infrastructure. Unlike Douhet, he abhorred direct attacks against civilians in any form. U.S. Army aviators eschewed the concept of attacking defenseless women and children as morally and politically unpalatable and so did not support Douhet's ideas fully.[68] Instead, Mitchell thought attacks against the war-making capability of a nation were more effective. These targets included industry, agriculture, and infrastructure (e.g., roads, rails, bridges, waterways, and other vital centers). Bombing of these targets required precision bombardment in order to destroy factories and avoiding (or minimizing) civilian casualties. Mitchell thought the bombing of a nation's "nerve centers" earlier in the conflict would significantly disrupt the country.[69] Instead of Douhet's thesis that the war was won by breaking the will of the people, Mitchell advocated hindering the enemy's war-making capability by attacking vital command and industry centers; their destruction would end the enemy's ability to conduct operations. Although Mitchell believed that air forces could attack an enemy's homeland, he still supported the idea that land and naval forces would also contribute to an enemy's defeat. Enemy armies and navies were still targets and the airplane would enable a nation to destroy them at a lower cost and faster rate than in the past.

Mitchell did, however, champion Douhet's theory that gaining control of the air was the first objective for any air force. Any attempt to gain superiority over an enemy's air forces would be undertaken primarily through air battles against enemy air forces. Mitchell believed that "the only effective defense against aerial attack is to whip the enemy's air forces in air battles."[70] This differed greatly from Douhet's concept that control of the air is achieved primarily by attacking enemy aircraft on the ground. Additionally, the ability to gain control of the air would require specialized fighter aircraft in place of Douhet's all-purpose battleplanes. Mitchell recommended that an air force build a mixture of aircraft that included bomber, pursuit (fighter), attack (ground troops support), and observation (reconnaissance) planes. In 1921, Mitchell estimated that this "balanced" force would be composed of about 60 percent pursuit and about 20 percent each of bomber and attack aircraft—hardly a force dominated by strategic bombers. Mitchell's better balanced force structure would be capable of a multitude of missions for a nation, but the long-range bomber was still the dominant aircraft type, despite the inclusion of attack, pursuit, and observation planes. Bombers would deliver a knockout punch to an enemy's war-making capability. Pursuit aircraft could help defend the nation against bombing attacks. For the United States, the bomber had to cross oceans to strike naval vessels at sea or attack European targets. Douhet's Italian battleplanes would conduct their bombardment missions over shorter ranges than would American aircraft.

After gaining control of the air, Mitchell's air force could attack a nation's vital centers or other targets, such as troop formations and supply depots. Any remaining enemy aircraft would be occupied defending their country from bombardment missions and so would be disabled as an offensive force. Two oceans protected the United States, but also provided two coasts vulnerable to attack. Long-range bombers could protect the nation by attacking enemy battle fleets. In July 1921 Mitchell successfully demonstrated aircrafts' ability to sink

battleships when his planes bombed the captured German battleship *Ostfriesland,* and other vessels, with 2,000-pound bombs. The sinking of this heavily armored dreadnought signaled a new age for naval and aerial warfare. Mitchell's dramatic show of airpower's dominance over a naval vessel once thought invulnerable provided compelling evidence of airpower's potential as a weapon and started a national debate about its strategic value.

Mitchell's ideas were instrumental in orienting future American airpower toward bombardment and making it an independent force from the army and navy. Like Douhet, Mitchell made several assumptions about airpower that would later be challenged under combat conditions, other of his suppositions would be validated. Offensive combat air operations were the keys to success. The bomber's getting through to the enemy's vital centers was contingent on a friendly force's ability to win the air battles critical to determining control of the air. Mitchell thought that air defenses—antiaircraft artillery and pursuit aircraft—were not as technologically advanced as the bombers; this permitted offensive combat operations to dominate aerial warfare. If bombers could get through a country's defenses, enemy forces then could do the same damage to friendly cities and industry as that nation's bombers were inflicting on their cities. Additionally, advances in technology that made the bomber supreme were not seriously considered for the single-engined fighter.

Mitchell did bring many issues about defense to public attention for debate. Aircraft were pitted against naval battleships for the mission of defending the United States, and Mitchell sought a public forum, instead of Douhet's mainly military audience, on airpower and its proper role. Defense budgets were shrinking during the interwar years in the United States and service branches were competing for every defense dollar. Mitchell's bombing experiments exposed the vulnerability of naval vessels to aircraft attack, and their potential obsolescence and inspired Mitchell to embrace the idea that airpower would dominate both land and naval warfare in the future. The creation of an independent air force from the army, however, ruffled many feathers. Several U.S. Army leaders envisioned aircraft protecting ground units from enemy bomber-forces and supporting ground operations, not conducting an independent bombing role. All of these ideas would be tested in World War II. Mitchell did not live long enough to see how bombers dominated the AAF during World War II, or the creation of his cherished independent air force in 1947.

Mikhail Tukhachevsky and the Deep Battle Concept

Mikhail Tukhachevsky, a marshal in the Soviet Union's pre–World War II army, developed a combined-arms theory of warfare that affected events in World War II and beyond. The introduction of the airplane and the tank were innovations that Tukhachevsky incorporated into his ideas about the offensive and "deep battle." These new weapons allowed an army to strike quickly against an enemy and seize economic and political targets, the less of which would contribute to its defeat. This capability allowed Tukhachevsky to expand on the relationship between economic and diplomatic affects on war. His writings underscored that a theory of war should not concentrate exclusively on its military aspects, but embrace a total effort to defeat a foe.

Tukhachevsky was instrumental in the development of the modern Soviet army. He was originally a czarist officer who fought in World War I and later supported the communist effort in the Russian civil war. He rose quickly in the ranks of the Soviet army through key command and staff positions. Tukhachevsky authored several Soviet army field regulations that incorporated technical advances, such as the airplane, tank, and use of paratroops for his forces. These manuals looked at the combination of weapons and their use to fight a battle. However, convincing other Soviet political and military leaders about the validity of these ideas was difficult. The Soviet Union's disappointing experience in the Spanish civil war during the 1930s did not provide sufficient evidence that tanks were necessary for victory. That war was fought over tough terrain; in addtion, the tanks were relegated to direct support for infantry, not deployed as independent mobile units. Soviet aircraft were not as developed as German aircraft to support ground combat.

Tukhachevsky's rapid rise through the army ranks became a source of jealousy among military and political rivals. He later ran afoul of Josef Stalin and was accused of plotting a coup against him. Stalin would order Tukhachevsky's execution in 1937 as part of a purge of the Soviet military, in which approximately 50 percent of all officers were killed or imprisoned. Military affairs were controlled not by their commander, but by political commissars. Unfortunately, the Soviet army lost most of Tukhachevsky's gains for the military. The Soviet army's poor performance in World War II during its operations against Finland, and later Nazi Germany, could be attributed to this loss.[71]

Tukhachevsky's ideas about war were inspired by his World War I experience. He was not alone: the horrors of trench warfare were still fresh in the minds of many Soviet military leaders. Hundreds of thousands of Russian soldiers died fighting poison gas, barbed wire, machine guns, and military strategy developed by inept officers that failed their soldiers and army. Offensives struggled to gain ground through the mud and fortifications as the war became one of bloody attrition. The defensive form of warfare reigned supreme; soon, however, the tank and the airplane offered new means to overcome some of the problems of modern war. Mobility and firepower gave a commander a "new" way to fight: a return to the offensive. Although the tank was first introduced in World War I trenches, it was used not as an independent force but as support in infantry attacks. Armor visionaries around the world contemplated the application of more independent armor operations. Tukhachevsky was one of those rare military leaders who could envision the use of new technology and devise a strategy for them. Tukhachevsky's deep-battle concept relied on the most mobile assets available to strike and paralyze an enemy force.

The deep-battle concept was relatively simple, advancing the idea of annihilation to defeat a foe. The strategy was to use four echelons, or phases of a conflict, to meet particular objectives as an approach to a battle. The first echelon was devoted to using aircraft to bomb and strafe enemy positions, creating favorable conditions to begin a ground offensive. Additionally, fighter-aircraft would gain air superiority to ensure free movement by friendly aircraft and deny enemy air forces the opportunity to attack friendly ground forces. Aircraft prepared the battlefield for later action. The second echelon used a combined force of tanks, infantry, and artillery to breach the enemy's defensive positions and allow mobile forces to take advantage of this opportunity in follow-on attacks. Tukhachevsky's third echelon involved armor forces quickly gaining control of key rear areas, such as factories and cities. They would then surround and destroy any surviving

military forces. The fourth echelon used reserve forces to consolidate the gains made in the third phase.

The idea of deep battle allowed the Soviet army to carry the fight into the enemy's rear areas and vital centers of gravity. There might not be a decisive force-on-force battle; instead the conflict would consist of maneuver and selected attacks on an enemy's most vulnerable defenses. Victory through annihilation was reborn.[72] The offensive would entail an initial operation, pursuit, and decisive operation. The decisive operation would focus on the breakthroughs on the defensive lines and proper massing of force.[73] The best route to victory was through the destruction of a foe's human and material resources, and through the weakening of their morale and ability to resist continued assaults. Every action was designed to encourage the annihilation of the enemy forces and resources.

The modern weapons available to Tukhachevsky allowed him to expand his ability to attack. Mobility, aircraft, and tanks made it possible to attack simultaneously along a front.[74] This permitted a force to attack anywhere along a front, rapidly regroup, maneuver, seize an enemy's rear areas, or cut off a retreat. The application of this deep-battle concept was aided by the introduction of new weapons and the innovation showed by Tukhachevsky. These new weapons allowed the Soviet to exploit a breakthrough of the enemy lines, unlike in World War I, in which most commanders who tried to break through established battle lines had difficulty with maintaining successive offensive actions. Tanks and aircraft could perform this duty through their rapid mobility and, in the case of armor, its capability to regroup, strike the enemy's rear, and maintain pressure on the enemy.

Tukhachevsky was a true believer in the offensive: He was so convinced of its value that he thought the Soviet Union could spread revolutionary wars to other countries.[75] This conviction helped shape Tukhachevsky's concept of war. He envisioned wars in the future as total or absolute whose main objective was to advance the cause of revolutionary change throughout the world. This total war would include the mobilization of economic, social, political, and military functions to contribute to victory. The best method to win the war was through the mechanization of the army using the deep-battle concept. This would require the use of regular military forces, not reservists, militia, or guerrilla forces,[76] and incorporate aircraft, tanks, artillery, and other modern technology, which required the support of a viable economy.

Tukhachevsky assumed other countries would use the same technologies and strategies against the Soviet Union; the rise of Japanese and German military forces concerned him. Japanese forces were massing in the Far East (although they were aimed at China) and were already on a full-mobilization schedule producing armaments and increasing their military power. Similarly, Tukhachevsky knew that the Germans were violating arms-control treaties by building aircraft and naval vessels in numbers that were contrary to Allied peace conditions. These developments were monitored carefully as potential threats. The Soviets needed an independent military-industrial capability to maintain their army's strength. Additionally, a huge, regular force would allow the Soviet Union to quickly monitor and mobilize in case of an emergency, and meet the challenge of maintaining two possible defensive fronts against the Japanese and Germans over fronts of approximately 10,000 kilometers.[77]

Economic strength was another important condition during war. Tukhachevsky believed that the Germans had lost World War I because of inadequate preparation for

contingencies of war.[78] The deep-battle concept could help destroy a rival's capability. Economic planning was needed to support the military objective. Industrial planning was required to improve the long-neglected transport, chemical, and communications capabilities of the military. The focus of economic planning was on heavy industry that could mobilize quickly to produce sufficient weapons and munitions in time of war. The Soviet Union separated military-industrial capability and civilian industry.[79] Military production of tanks, aircraft, and other munitions would continue independently of civilian requirements. If there was a war, then civilian production capability could be mobilized to support military objectives. Because the Soviet Union was large geographically, the nation could dismantle or disperse key industry into the heartland in the event of war. In addition, the Soviet Union should not rely just on the use of its own industry, but should continue its contact with capitalist economies to help aid the Soviet Union.[80] The Soviet Union could use capitalist economies to supplement its own productive capacity.

The Soviet Union required economic power to win wars, and so their economy was at risk of becoming an enemy's target. The vulnerability of the Soviets' economy to a blockade by hostile nations worried many in the nation's leadership. The use of diplomacy would help forestall potential economic blockades by maintaining good relations with nations or encouraging capitalist economies to trade with and aid the Soviet Union in an emergency.

Although a war would be fought for political objectives, the tools to fight that war included economic and diplomatic efforts. Military commanders were placed in a position to dictate their needs to economic planners and diplomats, but control of economic and diplomatic efforts was not to be left entirely in military hands. Military, economic, and diplomatic efforts required specific knowledge and understanding to work successfully.[81] Personnel from those fields should lead and command in their areas of expertise. Tukhachevsky worried about implementing this practice in his own military units. The Communist Party established political commissars to educate and influence military personnel toward an acceptable ideology. Political interference by communist officials and commissars would hurt military planning and preparations by diverting attention from a potentially critical situational analysis to questions of political allegiance.

The Soviet Union had fought a disastrous war against German forces in World War I and had seen Western and other powers support opposition forces during the Russian Revolution.[82] Foreign powers were suspect. Surprisingly, the Soviet Union did not withdraw into a shell about the development of military thought and theory. Soviet military forces trained with a number of foreign militaries during the interwar period, especially the Germans. The Soviets benefited by learning tactics and receiving training from German army officers, who were developing their own doctrine of using the combined strength of armor, infantry, artillery, and aircraft in ground combat, and the Germans were happy to be able to test ideas away from the prying eyes of the British and French by working deep within the Soviet Union.

Mikhail Tukhachevsky developed ideas about combined military forces that were novel for his time. Although set aside during the Stalin purges, his theories were revived by the Soviet Union in its Great Patriotic War against Nazi Germany. That conflict's use of armor, aircraft, and paratroops was revolutionary in its combination of technology and military thought and reinforced the idea of offensive power. The Soviets were also obliged

to use economic and diplomatic efforts to ensure the success of its war efforts: industrial capability to support war planning, and diplomatic efforts to forge and maintain relations with the capitalist nations to protect Soviet forces from blockade and secure economic aid during a war.[83] Diplomatic efforts would also help the Soviets to gain capitalist support to fight a coalition war with nations that were friendly to the Soviet Union.[84] Tukhachevsky's combined arms theory provided a coherent plan for Soviet leaders to coordinate military-industrial-diplomatic efforts during a conflict.

John Frederick Fuller: Armor Theorist

J.F.C. Fuller revolutionized the use of the tank and transformed modern warfare theory during the interwar years between World Wars I and II. Many resisted the advent of changes in warfare, but Fuller was able to observe and adopt many of these new changes into the military thinking of his time. Fuller, a British major general in the Royal Army, was the chief of staff of the Royal Tank Corps during World War I. As a serving commander and soldier in the First World War, Fuller saw the effectiveness of the offensive evaporate with the introduction of rapid-fire artillery, machine guns, barbed wire, and other innovations in defensive warfare that stopped infantry advances cold. The tank changed all of these concerns for Fuller.

In World War I, most nations used the tank to support infantry advances in their attempts to breach enemy trench defenses. Fuller not only advocated the independent use of the tank as an offensive weapon but wanted to exploit this breakthrough—very similar to Tukhachevsky. Fuller, however, went further and recommended total mechanization of ground forces with an emphasis on the tank as the main ground-weapon for armies. Mechanization brought more mobility and firepower to troops; this approach changed the face of warfare, and Fuller consequently developed his own principles of war that are still in use today. This proposed transformation of the army was predicated on advances in technology.

The main objective of a military force was to destroy the enemy force, either by "wearing it down" by attacking enemy soldiers or "rendering it inoperative" by eliminating its power of command.[85] Past warfare concentrated on wearing down the enemy; now, modern weaponry allowed a nation to strike at any enemy's power of command, and it could use fewer forces to win the war quickly. The main targets for an army would now become the opponent's military headquarters, command posts, and communications centers. According to Fuller, the enemy's command system was vulnerable to two new weapons: the airplane and the tank.[86] Enemy forces, knowing their weaknesses would defend these targets. Aircraft could overcome most of the defensive obstacles, but were vulnerable to surface attack when they landed. Tanks enabled a military force to maneuver and create situations in which it could surprise the enemy and present unexpected conditions for its foe. Tanks could endure an attack and still maintain contact with an opponent to defeat it. If the entire ground force were to be mobilized, the ground attack could sustain itself and maintain constant pressure on a military front. Aircraft, in contrast, would have to land to refuel and rearm.

Fuller believed that a tank's armor, mobility, and firepower would eventually replace infantry and artillery. Tanks would allow a military commander to go on the offensive and, as Tukhachevsky advocated, conduct operations deep to capture command centers, depots, and other vital centers that would lead to the enemy's defeat.[87] Mechanization and mobility would force changes in other military branches, too. To exploit the advances in mobility, infantry needed to keep up with tanks and would require additional protection. Similarly, exposed artillery and the dynamic nature of a fluid battlefield required artillery to replace its slow transport system with its own mechanization. The role of infantry was now relegated to secondary operations, such as guarding rear areas. The main military force was the tank.

Fuller also argued that the ability of military forces to maneuver and strike quickly were the keys to victory. All forms of ground warfare would become mechanized, resulting in the ability to move freely across the battlefield. This freedom allowed a commander to concentrate and strike against enemy positions that were readily open to defeat and therefore win the war quickly with far fewer casualties than any infantry battles. This newfound ability to move would allow forces to operate like cavalry, except that it had more sustained firepower and the capability to transport forces at a farther range.

In May 1918, Fuller proposed that the Allies launch a massive tank offensive against a 90 mile German front. Plan 1919 was designed to bring the war to a victorious conclusion for the Allies. The Allies would use a tank force to breach the German lines and attempt to disrupt the German-command structure. Any German forces left on the front would be captured or destroyed by follow-on tanks. Once the front was opened, more tanks would support the initial breakthrough and pursue the enemy. Enemy forces would also come under attack by Allied aircraft. Fuller estimated that he needed over 4,352 tanks for the battle.[88] Plan 1919 was never implemented.

Fuller believed that the future of warfare lay in advances in science. The introduction of new technology and weapon systems offered an ever changing image of warfare. The airplane and the tank were examples of advanced technology that led to additional opportunities for a nation to exploit. If a nation did not use these advances, other countries were sure to exploit the technology themselves, and this situation would leave a nation open to military defeat. Fuller not only advocated that a military use the internal-combustion engine, but would also use such weapons as poison gas.[89] Science might bring all types of new weapons that would overwhelm existing systems. These developments might create situations where a military force would need to innovate. For example, scientists would someday find a defense against the tank despite its mobility and firepower. Fuller advocated that armies field tanks with greater mobility and firepower, not armor, to counter this threat. Maneuver and firepower ruled the battlefield.

The changing nature of warfare forced Fuller to think about war and its causes. Fuller's ideas grew out of his belief in rational thought. That is, the main rationale for war came from a nation's or people's dissatisfaction with the current peace, and centered on three basic causes of war: ethical, economic, and military.[90] Ethical causes spring from cultural, religious, educational, or psychological differences between groups that provoke them to fight one another. Economic causes stem from a nation's desire to gain prosperity. This includes controlling raw materials and markets; countries in competition for these assets

became potential enemies. Military causes of war come from the national imperative to protects its homeland. The state can maintain a strong series of fortifications along its border, undermine its neighbors, or both to ensure its security. These causes or rationales create tensions between nations. In turn, the nations might initiate political actions to settle problems without military actions, but the situation could erupt into war. Fuller also considered biological causes, such as instinct, as an explanation for war. Self-preservation gave man the "natural and indisputable right to protect his life, not for moral reasons, but on the physical grounds, because he possesses the might to do so."[91] Moral conventions and rights, however, mediate these primal responses to aggression.

Fuller examined how a nation could structure its military most effectively to fight a future war. Fuller believed that if one mechanized the arm to create an armor-heavy force, military victory might be swift, because other nations would not be able to mobilize quickly enough to halt these attacks. Using a powerful armor force could be less expensive than maintaining a large standing army, and fewer soldiers with greater mobility and firepower also could reduce the need for total war. Fuller became an advocate for a smaller professional army that was ready to use its armored and mechanized forces at a moment's notice. The reliance on tanks for mobility on the battlefield would eliminate the logistical requirements of traditional cavalries of added personnel and horses. Other than petroleum products and ammunition, Fuller's force was estimated to be more cost-effective and less unwieldy than a conscripted mobilized force. Smaller armies fighting one another would also reduce battle casualties in comparison to the carnage experienced in the trenches of World War I's western front.

Fuller developed a set of principles of war that enumerated many of his ideas and provided valuable guidance to military leaders for years. One of Fuller's key ideas was conducting operations with the minimum resources needed to accomplish the mission. This "economy of force" fits into his conception of mechanized warfare with tanks and other vehicles that stress limited war and only the necessary use of resources. These principles of war would help a decision maker use sound judgment in the heat of battle. Although not a checklist of activities that must be accomplished for victory, they are a guide for leaders to consider in warfare.

Fuller illustrated how a military commander could use a force structure built around economy of force to attain its objectives. The nine principles of war that make up economy of force are: direction, concentration, distribution, determination, surprise, endurance, mobility, offensive action, and security. Direction, determination, and mobility provide a military commander with a level of control that can affect the outcome of a battle by shaping friendly forces toward a particular objective, impressing the enemy with firm purpose, or channeling him into making a particular decision by eliminating options for movement or action. Similarly, the enemy could come under pressure to take particular actions that are detrimental to its position, or to advance friendly objectives. Concentration, surprise, and offensive action allow friendly forces to gain an advantage by taking a proactive stance. Finally, if the enemy is on the offensive, friendly forces must provide own their ability to resist. Distribution, endurance, and security support this goal. Distribution of forces allows the military commander to position forces at the right position, strength, and time. Endurance provides sustained effort and security avoids surprise attacks

or actions by the enemy. The ideas of control, pressure, and resistance mutually support one another and are an integral part of setting the conditions for a commander to plan a campaign.

Basil Liddell Hart: Strategy Using an Indirect Approach

Basil Liddell Hart was a contemporary of J.F.C. Fuller's, and, like him, served during World War I; in Liddell Hart's case as part of the British Expeditionary Force sent to Western Europe. Liddell Hart's military service was limited to training volunteer infantry units after he became a casualty of a poison gas attack in France. He is credited with developing the concept of the indirect approach to modern warfare. World War I's physical destruction and massive casualties were not lost on Liddell Hart, who sought a way to reduce the carnage of war. This indirect approach was a method to reduce casualties. He later became a journalist who devoted much time to writing about military subjects, using this platform to express many of his beliefs.

The advent of mechanized warfare and aircraft allowed Liddell Hart to view warfare, in some respects, in a manner similar to Fuller's. Initially, Liddell Hart limited his written ideas purely to military strategy and did not address the political or economic aspects of warfare, he did, however, always think political, psychological, and economic factors in war were important. Liddell Hart merely focused more intently on military instruments of war. In his later life, Liddell Hart would expand his thoughts on strategy that included all instruments of power—military, political, and economic—to achieve a nation's objectives. Not surprisingly, he concentrated mostly on British military affairs and considered how Great Britain would fight its next war. If the security of Great Britain was threatened by Germany, then deploying another expeditionary force to France was not his preferred solution. Britain should not repeat its World War I experience of a long, costly campaign. The British instead should use its navy and air force to blockade Germany. The British Royal Navy was unequaled in Europe and the Royal Air Force (RAF) was a developing bomber force. Any defeat of Germany on the ground would have to come from Britain's ally, France. This concept of limited liability favored Britain's strengths and minimized the risk of being sucked into another major ground war in Europe. In a worst-case scenario, Britain was secure from invasion because of her natural defense: the English Channel.

If the British were forced to enter a European ground war, then a strategy that avoided World War I's bloody price for victory must be found. Liddell Hart's most famous contribution to military thought was his concept of an indirect approach. The main aim of a military force was to defeat the enemy, but this did not necessarily need to come from a battle of annihilation or frontal attacks. Instead, a well-planned strike along an enemy's front may disable a foe. The goal of this strategy was to "dislocate" the enemy by dissolution or disruption in battle,[92] which could be accomplished in several ways: by creating unforeseen conditions that cause the enemy to change locations of his forces; by separating his forces; by threatening logistical and communications lines; and by cutting off avenues of retreat to his strategic base or country. One method to accomplish this dislocation was the movement

or threat to attack the enemy's rear positions. A swift armored and mechanized force could select positions against the enemy and attack among a limited front. The goal was not the enemy's destruction as much as it was the psychological effect on the mind of an opposing commander to give up his position.

The selection of the appropriate location forced a commander to choose between positions that were least well defended or likely to be attacked. Most commanders would attack these positions without much thought. Liddell Hart's concern was that the "line of least resistance" might be a trap. If these positions seemed like an attractive target to friendly forces, then the enemy might be expecting their interest and defend them or prepare for an attack. Instead, perhaps looking for an indirect approach was more appropriate. Attacking at an unexpected location as an indirect approach to the enemy's positions could dislocate his forces along the front. Rapid mobility, the element of surprise, and the flexibility to change his own plans, as conditions dictate, allow the military commander to react more effectively to enemy actions.

Liddell Hart's intent was to reduce opposition by using an indirect approach that maximized offensive power. He had several critics, however, who believed counterattacks against the indirect approach would negate any benefits this sort of offensive might initially bring. Friendly forces could use several methods to keep the enemy from counteracting attacks in their immediate rear areas. One approach was to keep enemy forces pinned down to defensive positions by staging diversionary attacks throughout the lines that would put constant pressure on a front. Additionally, the threat of further attacks along the front could affect the enemy's commander psychologically. These actions would help keep the enemy force focused on the front and not on preparing against an indirect approach.

This strategy was called the "expanding torrent." In Liddell Hart's opinion, modern offensives should avoid using a direct attack whenever possible, because defensive forces had a great advantage over the offensive because of the modern weaponry already seen in World War I, and ones being developed in the interwar period. It was more effective to keep the enemy distracted with probing attacks among the front and then conduct a strike onto his rear positions. Indirect approach was a means to accomplish this expanding torrent.

Liddell Hart disagreed with Clausewitz about the value of the decisive battle and numerical superiority. Modern technology allowed a military force to accomplish many objectives and goals without a direct attack. Although World War I had revealed the extent of man's ability to use modern technology to create weapons that increase casualties and hinder direct attacks, this same technology might provide avenues to overwhelm defenses and wage war.[93] Liddell Hart claimed military leaders schooled in Clausewitzian theories caused the great carnage of World War I. Now, airpower, which could destroy an enemy's economic power, and mechanization, which improved land forces' mobility, meant armies could strike at the heart of the enemy while avoiding direct frontal attacks.[94]

Liddell Hart had a different perspective on the value of mechanization than Fuller did. Fuller believed that tanks were the critical players in any ground attack and that these forces would strike the decisive blow against an enemy; infantry was relegated to protecting rear lines of communications or securing captured areas. Liddell Hart also believed in the future mechanization, but stressed the importance of infantry support for the tanks, and foresaw the potential of dive-bombers to replace self-propelled artillery.[95] Offensives using all forces in supported one another were an important element of an attack. Liddell Hart's theories

seem prophetic of the upcoming battles in World War II. German forces would mobilize tanks and aircraft, and coordinate the efforts of many of their other combat arms to punch holes in defensive positions and encircle enemy forces, which allowed their rapid victories over countries such as Poland and France.

Curiously, Liddell Hart continued to believe that the defensive form of war was stronger than the offensive. He concluded that, in a major European war, France would halt any German ground offensive. British naval and air forces would prevent the German forces from invading England. As events unfolded in 1940, the strategy of limited-liability's flaws were revealed. France was swiftly defeated in May 1940 by German mobile-armored forces. Instead of repeating the disastrous ground offensives of the World War I, the French army at in defensive positions—the famed Maginot line of fortifications—as Germany advanced on them. The Germans again used a variant of the Schlieffen plan to smash through Belgium. This time, they successfully encircled French and British forces and forced France to capitulate within weeks. The British forces in France retreated to England to regroup. Liddell Hart's desire to avoid massive casualties for Britain in a ground war was not achieved. The Royal Navy found itself on the defensive in the early years of World War II. German U-boats at times succeeded in blockading Great Britain, and regularly attacked shipping bound for Britain during the Battle for the Atlantic. The RAF was able to thwart the Luftwaffe in the Battle of Britain; the RAF, and eventually the USAAF, greatly helped Allied efforts to damage German economic activity and thereby their war efforts, but it took time and came at a high cost: many bombers were lost defending the English Channel or carrying out bombing raids against German industrial targets.

German successes in combined-arms attacks against Poland and France were viewed as vindication of some of Liddell Hart's ideas. The expanding torrent seemed very similar to early German blitzkrieg strategies. In Liddell Hart's later writings, he believed the attacking force of his expanding torrent could succeed if the enemy was caught by surprise and then could not recover swiftly enough to counterattack.[96] Liddell Hart's ideas about defeating a defensive force through his indirect approach proved a successful strategy to defeat a foe in several cases during World War II.

Liddell Hart's contribution to the understanding of conventional warfare in the last half of the twentieth century is classic. Fuller and Liddell Hart were particularly sensitive about avoiding casualties and were instrumental in overturning many of the existing doctrines that involved frontal attacks with masses of forces. Superior mechanization and firepower allowed modern armies to use maneuver to break out of the massed infantry tactics that resulted in wholesale casualties on the western front. Liddell Hart was also one of the first individuals to recognize that making innovative use of military forces could contribute to success over the apparent superiority of the defense over the offensive.

Alfred Thayer Mahan Transforms Naval Warfare

Land warfare had held a preeminent position in military thought and theory through the ages, but technology and expanding national interests challenged this emphasis. Early naval warfare appeared to use the same approach as land warfare—it was just fought on water. The

introduction of sails and steam power, however, allowed navies to conduct operations around the globe and carry out operations that were, in some cases, more effective than land power to achieve national interests. Additionally, as nations paid more attention to their economic and political needs, trade routes spread around the world—the hopes of a country's gaining wealth became paramount. These trade routes and colonies became an important concern for major powers and so navies became a key part of their national security.

Alfred Thayer Mahan was the first author to develop a major modern theory on naval warfare and who tied its importance to national interests. Mahan was the son of a prominent West Point professor, Dennis Mahan, who influenced the development of the cadets who would later become leaders in the American Civil War. Dennis Mahan taught his students Jomini's ideas and concepts, and although there is no evidence that he tried to influence his son with these beliefs, the younger Mahan was introduced to many of Jomini's military thoughts at an early age.[97] Alfred Thayer Mahan chose a different path than his father, however, and did not enter West Point. Instead, he elected to enter the United States Naval Academy and graduated in 1859.

Mahan witnessed maritime technology's change from sail to steam. During his early career, Mahan completed a number of uneventful naval assignments that spanned blockade duty in the American Civil War, positions at navy yards, and staff work at Annapolis. Mahan would have served out the remainder of his career in obscurity if not for an assignment that would allow him to develop naval theory. Mahan was assigned to the newly created United States Naval War College, which provided him the opportunity to reflect on, debate, lecture about, and record his naval theories.

As president of the Naval War College and professor of naval strategy, Mahan sought to identify how a nation could take command of the seas, and to investigate the relationship of geopolitics to geographic positions that allowed a nation to fully exploit its navy. One factor that promoted this belief was economic power. Expanding economic opportunity signaled potential growth of national stature for countries like the United States, who could use its navy to enrich its wealth and international profile. These ideas were refined in Mahan's lectures at the Naval War College, which were collected in *The Influence of Sea Power upon History, 1660–1783*. This book would eventually become an immense success in the United States, and was an immediate hit in the rest of the world. Mahan used a series of case studies and historical observations to illustrate his theories of naval warfare, and Mahan made a case for the United States to expand its sea power around the world.

Mahan's conception of sea power was very broad. Although he focused on naval thought, his objective was to get the United States to expand its interests from a domestic to a global arena. The industrial age had come to America and the nation was shifting from its agricultural base to a manufacturing one. Markets were sought in which to buy and sell goods and materials.

He made a major distinction between sea power and naval power. Naval power depended on the fighting ability of the navy to accomplish particular objectives, such as securing a nation's geographical position or expanding its overseas bases to extend the reach, and the size and quality of, the state's naval fleet. Countries that had access to commercial sea-lanes, such as Great Britain, had a great advantage over land-locked rivals. Overseas bases provided the coal for a steam-powered navy and other logistic support that

could extend a navy's influence. The fleet itself, however, was the primary key to support-ing operations. Sea power was much broader; it included naval power, overseas trade, and colonies. A nation used sea power to achieve many political and economic objectives that added new dimensions to its strength. The combined naval and commercial maritime forces aided the nation's ability to influence events abroad.

International trade and commerce enhanced a nation's wealth and power. Mahan sup-ported the proposition that diplomacy and war were means to support the ends of eco-nomic prosperity and security.[98] Mahan's writing reflected the view that economic support through trade was the key to America's growing industrial strength in the last half of the nineteenth century. Similarly, a nation's economy could suffer if it was strangled by sea power. Destroying enemy commerce at sea could make this a reality. The nation's economy could expand if it could sell its excess production of finished goods or raw materials. If the nation's economy prospered, the country would be propelled into becoming a great power.

In Mahan's view, sea transportation provided the most efficient and effective means to move goods and materials across the globe. Nations needed to trade their excess industrial goods to allow expansion of their manufacturing they needed a way to move these finished goods into the marketplace. These industrial powers also required raw materials for their factories and even food as the country moved from an agrarian-based economy to an industrial one. Naval power could also hinder a foe's trade, and therefore their economic power, by creating a capability to strike an opponent's colonies and bases. A navy could also isolate a nation and its colonies through blockade, although this was less inefficient than destroying another power's fleet or bases. Navies of great powers had to protect their mer-chant trading routes while trying to stop their opponents from doing the same to them.

Mahan believed that a nation needed several things to succeed as a sea power: geo-graphical position, physical conformation, extent of territory, number of population, national character, and the character of government.[99] These elements provided the basis for a nation to project its power and influence throughout the seven seas.

Mahan thought that nations that were not connected to a mainland or forced to defend or extend their territory could focus on the sea. Geographical position allowed England to develop colonies and trade routes that added to its wealth. England had to rely on the sea; crossing the English Channel to conduct even normal business with continental nations required a fleet. On the other hand, France dissipated its national strength by attempting, and failing, to expand its continental power. England's geographic position allowed it to concentrate its efforts on sea power and provide a good base of operations to conduct all kinds of naval operations.

Geographic position was not enough to transform a nation into a maritime power. The nation had to have a physical conformation or physical characteristics, such as a coast-line, and sufficient infrastructure for shipping, including ports, harbors, and seacoasts. Additionally, having inadequate internal resources, but a growing amount of national demand, could motivate a country to use the sea. A related characteristic is the extent of territory, or the quality of the physical conformation of the nation. This characteristic centers on the proportion of people living near the seacoast and the quality of the ports and harbors. Not only was the proportion of population living near the ocean important, but so too was the number of the population. A nation can have a large portion of its

population living on the coast, but Mahan stressed that it is the number of people working or employed directly by sea power activities that shapes its seagoing nature. This factor provided for a labor pool sufficient to create a sea power's commercial and naval strength.

A nation's ability to conduct maritime trade or naval operations did not qualify it as a sea power; the national character—its will to conduct such activities—had to be present. Nations must have the desire to establish colonies, conduct commerce, and trade. The commercial motives for trade and overseas colonies also required the government to act. The character of government should reflect the will of the people and support the raising of a navy, increasing trade, and gaining overseas bases. Most important to Mahan was the government's willingness to intervene in situations in which it could use its navy to support its national aims.[100] If the country possessed these qualities, it could become a sea power, which in turn would eventually make the nation great. Command of the sea meant control over any events at sea; not a particular area, but domination over all activities in a particular oceanic area.

Sea power provided the capability to fight a naval war, but how would the nation actually fight a maritime battle? This was a question of naval strategy that Mahan addressed in many of his works. Mahan theorized that the best way to defeat an enemy was economic strangulation by cutting its link to international trade. Since economic strength was the key to a nation's success and this strength was dependent on sea power, then the destruction of its enemy's capabilities might be accomplished via sea power, too. The destruction of commerce through hit-and-run target raiding was not the preferred method to defeat a nation. Commerce raiding would only limit an enemy's trade, and a nation could not be sure that an opponent would not do the same to its ships. Instead, major fleet engagements would destroy an enemy's ability to conduct naval operations or to survive as a sea power. Destruction of the enemy's fleet was paramount to establish command of the sea and allow freedom of commerce. This reflected the influence of Jomini's ideas on Mahan's precepts about strategy.[101]

A fleet was built to defeat another fleet, to secure sea lines of communications, and to ensure that a blockade would not affect the nation, and so acted as an offensive force that could. The navy did not require a major decisive battle. Mahan thought a nation could threaten another nation with naval power and take away its ability to deploy, or force its enemy to use strategies that would exhaust its strength.

Mahan's beliefs about blockade, like commerce raiding, supported the idea of direct fleet engagements. Blockades were a limited and minor part of a whole spectrum of naval power that used its fleet to control major ports or attacking the enemy's fleet.[102]

A fleet could affect the outcome of a war through the principle of concentration. The fleet could take two complementary actions. Mahan proposed using a portion of a nation's fleet in an attack against a part of the enemy's navy and holding the rest of the fleet in reserve to take further major actions as events unfold. This allowed the fleet to defeat a divided enemy. Mahan believed that concentration required mutual support among all forces and a unified command that allowed it to pursue a single major objective against the enemy's strategic center.[103] In essence, this principle of concentration allowed the fleet to defeat an opponent in stages.

Mahan's works initially were not accepted widely in the United States, but were circulated with great interest in Britain, Germany, and Japan. The German government, for

instance, embarked on a campaign to develop overseas colonies and started a naval arms-race with Britain in an attempt to become a major naval power. Much of this effort could be traced to Kaiser Wilhelm's study of Mahan's theories. Eventually, Mahan's ideas gained popularity among leaders in the United States, and actions were taken to expand the navy. Secretary of the Navy Benjamin F. Tracy; Henry Cabot Lodge, chairman of the Senate Naval Affairs Committee; and Theodore Roosevelt, then-assistant secretary of the navy, were widely influenced by his propositions.[104] These leaders would later become major proponents of a modern navy for the United States.

Julian Corbett: A Sea Power Theory

Julian Corbett was an English lawyer who wrote about sea power and the rationale for conducting naval warfare, using historical case studies to support his observations. Unlike Mahan, Corbett was not a naval officer, but simply had taken a keen interest in naval affairs and later became a lecturer at the Royal Navy's Naval War College. His major work, *Some Principles of Maritime Strategy,* borrowed many ideas from Clausewitz and examined how they applied to naval warfare. Not surprisingly, Corbett's ideas on naval warfare reflected a different approach than Mahan's did to fighting at sea.

Corbett generally agreed with Clausewitz that war was an extension of national policy.[105] All military land and sea operations were subservient to the political objectives of the nation. This belief would help shape the ideas Corbett presented about the nature of sea power in relation to other elements of national power. The navy was one of the tools available to a national leader to achieve certain objectives; in some situations, naval forces would play a predominate role, while in others, it would not.

War, for Corbett, was not necessarily fought to defeat another nation's military forces. Like Mahan, Corbett believed that the military forces and economic power could create conditions for the demise of an opponent.[106] The primary purpose of naval forces was to protect commerce and enhance the economy. A country could exert maximum effort to defeat another country only if it had enough resources to respond to an enemy. If the nation relied heavily on financial support to conduct a war, then it would need to protect its own economic resources, and could weaken an opponent by attacking its economic bases. Like Mahan, economic power was an important objective for offensive and defensive actions. Naval power could help in both situations. However, Corbett was not as focused on naval power as was Mahan because he believed that naval power alone rarely achieved this objective. Corbett illustrated this point through several case studies that indicated the joint use of land and sea power was necessary to defeat another country. However, Corbett firmly believed that naval forces were to support operations on the land; defeating an enemy fleet was important if for no other reason than to ensure that events on land were influenced.

Corbett's writings indicated that land warfare was quite different than war fought on the sea for several reasons. Corbett hypothesized that on land, warfare was always possible. Land warfare allowed, theoretically, the ability to strike at an enemy if one had the "spirit"

and resources to overcome obstacles and accept certain risks.[107] On sea, the conditions differed because ships could disperse, withdraw to a port where the enemy may not locate them, or simply stay beyond the reach of an enemy's fleet.[108] A naval force could concentrate its fleet to attack, but it would make itself vulnerable to being detected by doing so. The detection of the fleet could make it, in turn, a target of an enemy. If naval forces could disperse at will, fighting a decisive battle was problematic. Additionally, naval forces could require a wide range of support over a very broad geographic area. Controlling or denying lines of communications at sea would become a more difficult task than cutting a fixed railroad route's supply line. Perhaps an easier target, given the reliance on economic power, was to attack the enemy's commercial fleets. As fleets were more difficult to track and attack, the navy had more certainty protecting its own commercial trade-routes and ships. These ideas were quite different than Mahan's attack of enemy fleets were.

Sea power alone could not stop many activities on the European continent. Napoleon was able to conduct ground operations despite England's command of the sea over the French fleet. Instead, Corbett stressed that the navy provided opportunities to national leaders that could be exploited by ground forces. Wars between nations that were separated by oceans would rely on naval and land forces. Navies transported the appropriate land power to various islands and coastal areas. The navy could allow a power like England to concentrate their limited military forces in amphibious attacks against the coasts on an enemy or against their colonies.

Corbett suggested that Clausewitz's ideas on absolute war were not as appropriate at sea as they were on a continental basis. Instead, Corbett believed that limited war with a set of contained objectives was the more likely form of conflict. Wars between sea powers that were separated by oceans or that were island powers were most likely to be fought.[109] If a nation wanted to fight a limited war it would have to constrict its efforts into a particular geographic area; this capability required command of the sea.

The objective of naval warfare then, was to seek command of the sea or to prevent the enemy from attaining it.[110] Command of the sea was a relative measure of control. For Corbett, command of the sea meant that the enemy could not seriously interfere with a friendly power's maritime operations.[111] Command of the sea restricted an enemy's ability to move at sea and use his lines of communications at will. Conversely, friendly forces would be able to transit the oceans freely and ensure they had secure lines of communications. One characteristic of this condition is when an enemy power fails to be able to send its ships to sea. Some nations may be able only to restrict or achieve command of their sea objectives in one or a few theaters of operation. A nation also may achieve local command of the sea under limited conditions. The likelihood of a limited war was also illustrated by this nature of sea warfare. Even if a nation attempted to fight a classic decisive battle, both fleets would have to commit to a major engagement over a restricted geographic area. There were too many avenues for a fleet to hide or retreat and avoid the battle.

This interpretation of command of the sea was different than Mahan's. One might have local command of sea to affect an operation, but not total domination. Corbett's view was more akin to control over a more limited area.

Julian Corbett's observations about naval warfare indicated that taking offensive actions would be difficult because of the problems associated with locating and prosecuting an

attack. Corbett instead deferred toward protecting commerce, but emphasized that naval fleets should attempt to command the seas. By protecting the commercial trade-routes and avoiding an enemy's attempts to deny them access to sea lanes, Corbett appeared to argue that the defensive is a stronger approach to warfare than the offensive is. This observation would support a Clausewitzian view of war, but is in marked contrast to Mahan's view of offensive actions being the dominant force. Offensive actions are necessary however, to accomplish many missions and to take a proactive stance. Corbett did recognize the value of the offensive, but felt naval leaders also had to understand that defensive operations in naval warfare, like their land counterparts, were also difficult to overcome.

There were no firm rules or laws regarding warfare. Like Clausewitz, Corbett believed that there was friction present in fighting a naval war. For example, not being able to find a fleet, or a naval commander deciding to retreat into the safety of a harbor rather than face a possible attack, was important. The ability to plan a military operation perfectly was as unlikely on sea as it was on land. Guidance, rather than detailed planning, was necessary for a commander to be flexible enough to fight a dynamic naval war.

Fighting a war at sea depended on a number of factors that required planning at several levels. A national leader could use maritime strategy, an approach to put naval warfare in a proper focus with land warfare. This view would establish the proper role for naval fleets. At the next level was naval strategy: how leaders would maneuver and position their fleets to conduct the maritime strategy. Naval strategy provided an overall view of the contributions of the fleet to a war and a more focused approach toward the actual use of naval forces. These distinctions helped form naval leaders' perspective about the value and intent of naval operations from a national view down to the captain of a ship's mission.

Corbett's ideas are still very relevant today. Whereas Clausewitz tried to provide a general theory about war drawn from his experience with ground warfare, Corbett focused on a particular operating medium within the overall focus on war. Corbett's discussion of the differences between land and sea warfare helps one to understand the relationship between both environments and how to effectively use these forces in a conflict. The importance of economic power and the limitations, in Corbett's opinion, of conducting naval operations had to be recognized to evaluate how to apply naval fleets in the overall scheme of national security. Corbett also illustrated that in an age of technological change, warfare in another medium could find new life and meaning.

A navy or an army may have a predominate role in a specific environment, but the other military force could contribute to this effort, too. Corbett was one of the first military theorists to identify and acknowledge this relationship. A joint use of forces was recognized in everything from amphibious invasions up to a continental ground-war in Europe. Amphibious invasions were a key link between land and naval forces. They were a means to project land power from the sea and conquer territory or capture islands.

The recognition of using all types of forces to accomplish a political objective broadened the tools available for a national leader to accomplish his or her country's objectives and goals. Countries that did not possess a particularly large land force could look to other military capabilities to support its national interests with this philosophy. Although Corbett did not specifically address the role of technology that could change naval warfare, his views were quite flexible compared to Mahan's.

Bernard Brodie: Nuclear Deterrence

The advent of nuclear weapons heralded many revisions to existing thoughts on war. Tremendous power was harnessed into a single weapon. The introduction of nuclear weapons initiated an intense debate about the future of warfare that challenged the best political, military, and academic experts. Could a single weapon ultimately make armies, navies, and air forces obsolete? If nuclear weapons could destroy the world, then should they be built? If a small nation possessed the "bomb," should it then be considered an equal to other nuclear or nonnuclear powers? These thoughts were on the minds of many people who had the responsibility of building a national security structure to rival the growing threat of the Soviet Union. One was Bernard Brodie, a strategic thinker and writer who greatly influenced nuclear theory.

In his 1946 book *The Absolute Weapon: Atomic Power and World Order* Brodie made several observations about nuclear warfare that would help shape and define the debate about nuclear war in the United States about nuclear war and warfare in general.[112] Nuclear weapons could and did change the way nations defined and fought war. The atomic bomb was a weapon of great power, and could obliterate the foundations of a civilization. Could nations possess nuclear weapons and still maintain a peace without destroying the world?

Brodie thought the atomic bomb had changed the character of war in fundamental ways. A single bomb could now destroy an entire city. One nuclear bomb could be used in place of a conventional air campaign or ground-based attack, which would involve thousands of soldiers and airplanes, to eliminate an industrial power. This meant that fewer forces were needed to defend the nation. A nuclear weapon could also wipe out the entire industrial and military production capacity of a nation in a single blow.

Brodie also believed that there was no adequate defense against the atomic bomb, currently or for others at any time in the foreseeable future. Brodie saw the problem of a defense against atomic bombs to be the nation's reliance on its ability to shoot down the carrier-vehicle of a nuclear device. Airplanes were still vulnerable to air and ground defenses, and these types of carriers could be defeated relatively easy. However, technological progress that improved the quality of the airplane, created more destructive nuclear weapons, and produced more atomic bombs would still keep them a step ahead of the defenses against them.

Nations then would have to produce a better carrier for the atomic bomb. In particular, Brodie looked at the ballistic missile as a way to cheaply and more effectively deliver a nuclear weapon. These missiles greatly increased the range of destruction offered to a nation's leadership. They were also impervious to current defensive systems. Likewise, Brodie thought an extension of a bomber's range and capabilities would complement the use of a ballistic missile; a nation could then launch bombers within its own borders and would never require vulnerable overseas bases. If a nation had an atomic bomb and these types of delivery systems, then it could rival the power of any nation on the face of the earth. A small country had as much effective destructive power as a much-larger one.

Brodie thought a country with air superiority (command of the air) could not guarantee its own security. Despite a nation's possession of fighters and interceptors, bombers could still get through to their targets—just as Douhet had foreseen. The attacking nation had to get only one missile or bomber through to their target for an attack to be effective.

For example, the Imperial Japanese Navy launched a successful surprise attack at Pearl Harbor; the numerically smaller Japanese attack force used deception and surprise to succeed. This defensive vulnerability would expand as ballistic missiles were developed, deployed, and armed with nuclear weapons.

Similarly, a superiority in the number of nuclear weapons is no guarantee of a nation's security, either. Brodie thought that a nation with atomic bombs should restrict their use to densely concentrated targets, such as cities, to achieve maximum destruction. Cities were valuable targets because of their concentrated political, economic, and military power. The distinction between nonmilitary and military targets in an urban setting would become blurred when a nuclear weapon was used against the industrial or military target because it created collateral damage to civilian targets. Indeed, the chief priority among selection of cities as targets was its value to the nation's economy. Cities were too lucrative a target to avoid.

Finally, Brodie forecast that nations, other than Britain and Canada, would develop nuclear weapons within five years. If certain parties believed that the United States could alter other nations' plans to develop and deploy their own atomic bomb, they were mistaken. Those nations would rather argue from a position of parity with the United States than from one of weakness.

Advances of technology will increase the threat of atomic bombs in the future. Carrier-vehicles will become more efficient and nuclear weapons more powerful. Brodie believed that the only way to avert another nation from destroying cities in the United States was to threaten an enemy's cities. The fear of retaliation was the chief means to combat the rise of nuclear weapons. In the case of strategic nuclear combat, militaries were now relegated to averting wars, not winning them.

Brodie was interested in finding a countermeasure to the rise of nuclear weapons. If the proliferation of nuclear weapons could not be stopped, the United States needed to establish a policy that would ensure the safety of the nation. Brodie advocated the use of nuclear weapons as a deterrent. In the past, weapons could be used for either an offensive or defensive purpose. For example, a tank could be used as part of an offensive by breaking a defensive line. Conversely, that same tank could be used to conduct a counterattack and defend positions that put themselves between armies and homelands.[113] Nuclear-armed missiles and bombers could not protect cities with a shield; they were strictly offensive weapons.

Brodie expressed many possible ways to conduct war in the future. Countries could conduct a preventative war, preemptive attack, or massive retaliation. Preventative war is a premeditated attack on a foe without a specific provocation to eliminate a nation's military capability, especially its strategic airpower. The nation that is building up its military may not have decided to attack its neighbor, but that neighbor might watch the increase in its military capability and fear that it may one day be attacked. Instead of waiting to see what the intentions of its neighbor are, a nation might launch a preventative attack. A preemptive attack is a form of preventative attack, and occurs when a nation conducts a strike on a foe, given that the enemy has already decided to go to war and is preparing its own attack on the nation. A preemptive attack occurs before the enemy actually starts its combat operations. Brodie identified another type of conflict: massive retaliation. Massive retaliation involves a great use of military power, (i.e., the use of nuclear weapons) in any

conflict—from total to limited war—to deter any acts of aggression. No matter what the size or intent of enemy action was, the nation would respond with a nuclear attack.

The United States faced many issues before any decision about adopting these possible military options for its national security could be made. Preventative war advocates believed that striking first provided a crucial advantage in nuclear war to eliminate the possibility of nuclear bombs falling on the United States, assuming total war was inevitable.[114] This alternative's rationale rested on the idea that the nation could find appropriate targets and catch the enemy by surprise attack. The attacking nation had to destroy all of the enemy's nuclear weapons or else they could face a counterattack. Similarly, one might question whether total war was inevitable. Critics of this policy thought that a preventative war was not only politically unfeasible, but immoral. Additionally, countries could protect their nuclear weapons through hardening their defenses and dispersing their forces.

Preemptive attacks are also questionable. If the nation has indications that it will be attacked, then proponents of this policy believed they were justified in attacking first. This attack assumes, however, that the nation has sufficient information on which to base a very critical decision: whether to launch a nuclear attack. This information comes from observable actions, intercepted communications, or other means. This process would take time. What happens if the enemy keeps a strategic nuclear force in constant readiness or is willing to conduct a surprise attack without benefit of mobilization?

Massive retaliation, the official national nuclear policy during much of the mid-1950s, was also of major concern to Brodie. Many supporters of this policy stressed the economic value of massive retaliation. The United States did not need to station conventional military forces around the world to put out brushfire or limited wars; the nation instead could rely on its nuclear weapons. Massive retaliation against an initial nuclear attack was of great deterrent value against another nuclear power. Assuming that an appropriate amount of the nation's nuclear forces could survive, massive retaliation had a great appeal. Unfortunately, the use of nuclear weapons against a nation that was involved in a limited war was a different question. The value of massive retaliation depended on its credibility of use in total or limited war. If war came to Europe, would allied countries want to become a nuclear battleground? The United States could use nuclear weapons against Soviet forces driving through Germany, but those weapons might destroy the very cities that they were supposed to be saving. Additionally, what happens if the nation attempts to conduct nuclear operations against another nuclear power? If the nuclear opponent survives and possesses sufficient nuclear capability, it could conduct its own massive retaliation against the United States. Brodie believed that preventative war, preemptive war, and massive retaliation had a basis in the American psyche. These actions were rooted in the idea that military leaders always want to seize the initiative and go on the offensive. Additionally, the only effective way to defeat an enemy is through "liquidation."[115]

Brodie's contribution to these questions was an evaluation of the deterrent value of nuclear weapons and the use of limited war. His conclusion? National leaders should avoid nuclear war at all costs. Nuclear war had no winner. The United States had no motivation to conduct a preventative or preemptive war. The American people were not interested in expanding its territory or bent on a policy of conquest; they were interested in maintaining the status quo. Similarly, the American culture would not accept the moral responsibility of using a weapon of mass destruction against an enemy that might have initiated a minor

border crisis or a similar act. Massive retaliation also seemed like a crude answer to solve a myriad of complex political, economic, and military problems.

Brodie fell back to deterrence as a possible solution. Deterrence has been a tool of diplomacy since the dawn of civilization. Deterrence is the use of a threat, or implied use of force, if another country takes certain actions, and was designed to avert that nation from conducting those operations. An attacker has to weigh the cost and benefits of launching an offensive act. One could deter the attacker by raising the cost or lowering the benefit of a potential attack such that the attacker's expected benefit is smaller than that of not using force. Large conventional forces were replaced with stockpiles of nuclear weapons and their delivery systems.

Credibility to take the threatened action was key. The United States would need to be sure their potential foe understood that a nuclear attack on the nation would be met with a similar attack on the attacker's shores. Nuclear forces' readiness, modernization, training, policy, and exercises also contributed toward demonstrating the capability of and willingness to use these weapons.

Nuclear weapons changed many aspects of deterrence. At a time when nations relied on conventional forces, the largest military force possible was deemed to be the most effective deterrent against attack. However, a single nuclear weapon could now become as successful a deterrent as a thousand conventional weapons for a country. A large nuclear weapon aimed at Washington or Moscow, which had no apparent defenses, became a powerful deterrent. Brodie could not dismiss the first use of nuclear weapons if deterrence failed. He was more concerned about the Soviet Union's fear that its weapons were not survivable in the face of American nuclear forces or potential defenses against nuclear weapons. Nuclear weapons had to be able to survive an attack to be launched in a retaliatory strike, or the nation had to have a force large enough to guarantee even a limited amount of forces would survive. This concern reinforced the potential danger of nuclear weaponry.

Deterrence became a matter of satisfying several conditions. A nation had to have sufficient nuclear weapons to respond to an attack and make clear to the enemy the damage it will exact on its target. If the United States could convince the Soviet Union that if it were attacked it would have enough nuclear weapons to destroy Soviet society in return, then the U.S. leadership might dissuade leaders in Moscow from conducting a first-strike attack. This would limit the potential enemy's actions. The nation could create several nuclear-delivery systems that would compound any possible first-strike attack or defense. These weapons were land-based intercontinental ballistic missiles, submarine-launched ballistic missiles, and long-range bombers. The Soviets also built similar weapons. Brodie characterized this situation as one of "mutual homicide" that the United States and the Soviet Union were like "two scorpions in a bottle."[116] With a single sting, each nation could destroy the other. But this capability also suppressed each country's temptation to strike since it would lead to its own ultimate destruction.

The next area Brodie addressed was limited war. The age of total war was realized in World Wars I and II. Some individuals believed future wars against the Soviet Union would be fought as a total war, but nuclear weapons could bring complete destruction to both nations. Unless a conflict involved the direct existence or survival of a nation, would a state risk nuclear destruction? Nations were more likely to wage limited war. This type of war

was limited not because of incapability to make it a total war, but by intent. Limited war was chosen because of deliberate restraint on a nation's or its proxies' (i.e., countries representing a nation's interests) part not to escalate the conflict into a total war, with its eventual nuclear-weapons release and consequent destruction. The use of local forces or proxies was valuable to a great power. If a great power was involved directly in the fighting and was losing, it might escalate the use of force to win. Likewise, accepting defeat through proxies would be less painful and not as likely to turn into total war.

Brodie believed that limited war was fought for a few, narrow objectives. Unlike Clausewitz's view that the object of war was to impose one's will on the enemy, Brodie believed this idea had to be modified in light of nuclear weapons.[117] Compromise and negotiations were necessary to keep the war from spiraling out of control and becoming a nuclear conflict. War becomes one of position, not dominance, and the conditions for "winning" a limited war become clouded.

Bernard Brodie's ideas on military conflict helped shape the role of nuclear weapons for the United States. The introduction of new and deadly weapons forced national and military leaders to reconsider the nature of warfare and think about technology. In the case of Clausewitz, he looked at the nature of war, but did not see the value of new methods of fighting or technology. Nuclear weapons forced Brodie to look for stability not winning a conflict, in international situations. This was a novel concept and a reflection of the complexity of hostilities in the Cold War.

Thomas Schelling:
From War of Violence to the Threat of Hurting

Thomas Schelling further developed military theory about nuclear weapons and the nature of war. Schelling, an economist, worked in the White House under the Eisenhower administration and had dealt with many issues concerning arms control, nuclear weapons, and national security. Schelling's work greatly contributed to American military strategy in the Cold War and remains influential today.

Nuclear weapons had made war more complicated. Total war would result in the utter destruction of any antagonists through a combination of first-strike and retaliatory nuclear releases. Schelling believed that nations could be influenced regardless of whether they possessed nuclear weapons. A nation that had these weapons could exploit their "power to hurt" another country. Schelling believed the potential to hurt another state was more versatile than the actual use of forces.[118] The United States could exploit this fear or the implied threat of further damage to force a nation to do something that they were unwilling to do, or restrain them from taking certain actions. This power to compel other nations depended on the risk that a nation was willing to accept in the face of potential damage. The coercer had to have enough forces, credibility to accomplish the attack, and appropriate targets to damage in order to force the coerced country to comply.

A nation that wanted to use coercion had to view war in a different manner than in the past. The United States and other nations accomplished its political objectives by two

methods: brute force or the use of the diplomacy of violence. Brute force can result in military victory. This was the kind of action that most American leaders were accustomed to taking to secure a nation's objectives. Military victory through the destruction of the enemy was often advocated as the central goal of military theory. National and military leaders had witnessed or fought in World War II, where brute force was used—even encouraged—to the utmost. This policy culminated in the dropping of two atomic bombs on Japan. Commanders schooled in Jominian theory focused on the destruction of the enemy's army and centers of gravity. Diplomacy was not abandoned in American foreign policy; the threat of force to compel a party to take or avoid action was known and used. Diplomatic threats were common in the preatomic age: massing forces on borders or threatening a blockade had been used for centuries. Commanders also used a threat of further destruction to force compliance.

Schelling believed that nations had to consider the use of coercion as an alternative to brute force. If a nation resorted to brute force, the situation could escalate into a major nuclear confrontation. Instead, Schelling theorized that the threat of continued pain or violence was, at times, more effective than actual destruction. If a target was destroyed, it could no longer be used by an enemy. Conversely, an attacker could not extract any more value from that target; it was already destroyed. The attacker could restrain itself from destroying all or part of its opponent's military or other targets and hold them hostage. The attacker could then coerce its foe to achieve certain results. If not, it would raise the threshold of pain by destroying more targets until the other side capitulated.

Coercion may not have been used as often as brute force for several reasons. Countries may not have had the proper technology or the appropriate geographic situation to use coercion.[119] Aircraft and guided missiles were able to destroy many targets without much collateral damage relative to World War II-era weapons. The technology of precision-guided weapons that provided selective attacks allowed a nation to destroy factories or military sites at will. These advances allowed the nation to overcome geographic concerns. Countries with large land masses that could not be blockaded in the past now could be struck quickly and repeatedly by aircraft and observed by air and aerospace systems. More important, the technology available to nations did not allow for enough terror, shock, and fear to create an environment conducive to coercing a nation. Conventional strategic bombing in World War II devastated Germany and Japan, and yet after years of effort the allies failed to convince the Axis powers to surrender. The only exception was the two atomic bombs dropped on Japan; two relatively small weapons accomplished massive destruction on a scale never before seen by man. The promise of additional attacks could not be discounted by the Japanese government. The true target was not the factory systems or peoples of Hiroshima and Nagasaki, but the decisions being made by the national leadership in Tokyo.[120]

In past conflicts, an enemy's army or military had to be defeated before a diplomacy of violence could be implemented. In the case of nuclear weapons and modern delivery systems, a policy of violence could avoid the requirement for military victory. Violence, or the threat to use it, could be brought directly to the people. Conventional military strength was put into question. If military victory was not a prerequisite to win a war and nuclear weapons could force a nation to "hurt," then was total war rendered obsolete? Nuclear

weapons use in total war could destroy a nation before it was coerced. If both sides in a total nuclear war were convinced that their societies would be destroyed, then they might be coerced by a different level of violence. If the nations avoided nuclear war, they could be made vulnerable to other risks.

The nation could use the diplomacy of violence. The threat of escalating a larger war from a smaller one might affect a decision maker's nerve and force him to comply. Military commanders must now focus not on military victory, but intimidation, deterrence, and the art of coercion.[121] A complex new approach to warfare was born.

One concern Schelling debated was the credibility of the use of nuclear weapons. The value of nuclear weapons was in its destructive power. The nation had to project an air of confidence that it would actually use these weapons if it was going to intimidate or deter an enemy, or else it was futile. The image of a bluff had to be removed from an opponent's vision. Schelling did think the nation could adjust this image in another way; he believed that one could relinquish some of the control of nuclear weapons that could create more risk of a nation being coerced. Schelling believed that nuclear usage could be tied to certain events that automatically would force their employment in particular conditions. Indeed, an enemy could exploit these conditions in an attempt to manipulate a foe. To counter these machinations, if some portion of the control of nuclear weapons was removed from national leadership, then a foe might not be sure if its action would result in a nuclear attack or not. Additionally, the coercer might not be sure whether it will use a nuclear weapon or not.[122] Certainly, this new wrinkle would add further risk to an enemy.

This policy became one of graduated escalation, or response. The attacker can increase the amount or intensity of destruction against a power and force it to accede to the attacker's demands. Nuclear weapons might not be required. Depending on the target of coercion, the threat of nuclear weapons might not be feasible. Conventional weapons could do. Many nations, however, might still be under the cloud of a threatened nuclear-weapons usage. The attacking nation had the opportunity to hit small military installations or factories, and later graduate to destroying cities. Added pressure at each stage of the campaign, it was hoped, would increase the certainty of more harm and damage to an opponent. Each target increases in scale and scope of damage. The nation being pressured to comply may find itself under duress from not only this campaign, but domestic unrest.

Once a threshold of pain is reached, the nation is able to be coerced by another. These actions assume many factors are present: First, there are sufficient and appropriate targets to attack; second, the potential coerced nation has a low enough threshold of pain that it will fall prey to an attack; third, the coercer has the capability and will to accomplish a potentially long campaign; fourth, the target country must understand, and the coercer guarantee, that the attack would only stop if certain actions toward compliance are made and finally, this strategy assumes that the type of damage practiced on the enemy affected the behavior of that country. The idea of graduated response was tested in the skies over South and North Vietnam in the 1960s. The United States feared that a massive bombing campaign might cause a major conflict with the Soviet Union or China and that the American public would not accept an expanded campaign. Instead, a graduated response policy was used to motivate the North Vietnamese. The air campaign was envisioned as a way to increase pain to the Vietnamese, which would translate into compliance. The campaign

failed. The United States purposely constrained its targets and rules of engagement, however, which may have limited the effectiveness of graduated response in this case. These actions may have sent mixed messages to the North Vietnamese.

Thomas Schelling established a different viewpoint on war. He introduced a concept of including enemy behavior and technology in discussions about the nature of warfare. His beliefs about coercion and trying to limit war were influential in moving the United States away from a total reliance on nuclear weapons toward other uses of force to gain compliance from an opponent, particularly airpower. Schelling looked at war almost as a cold calculation: a science. Move and countermove were introduced in the strategic calculus of national defense and security. Questions about many classic military principles were raised. The uses of a decisive battle or mass of forces were reevaluated with the advent of nuclear weapons and their sophisticated, and apparent, ability to avoid defenses. Warfare in the nuclear age was getting more complex. New technology and the rate of change of weapons development forced military leaders to reconsider future war and its implications to national goals and objectives.

Martin Van Creveld: A Future Look at War

Clausewitz identified the remarkable trinity of government, the commander and army, and the people as significant factors in determining the nature and direction of warfare. Since the end of the Cold War, the world has seen more, and ever increasing, levels of conflict involving nonstate players. Terrorists and small groups of people united by a common cause have fought for a number of reasons, ranging from creating their own state, to securing religious or ethnic freedoms. These factions have placed added emphasis on the changing nature of warfare. Martin van Creveld has gone further: he believes that these nonstate actors may replace the state as the primary source of conflict.[123]

Since the rise of nation-states, war was fought mainly between governments. Although uprisings and revolutions did occur, the majority of major conflicts were fought between nations. This situation has changed abruptly since the Cold War. The advent and proliferation of nuclear weapons brought a new challenge: the possibility of complete destruction of societies. Limited wars and low-intensity conflicts became viable alternatives. This change undermined the concept that war was fought under a trinity because guerrilla forces or other revolutionary forces might not be a part of a state. Nations could only contain the conflicts, not win them.[124] Terroristic acts that were considered unacceptable in the past (e.g., attacks on civilians or religious shrines) have become commonly accepted behavior to terrorists. The bond between government, the army, and people now has a fourth component, terrorist groups. The nature of war becomes more flexible, not as defined as Clausewitz may have interpreted and presented.

Creveld sees war increasingly fought between groups of terrorists or revolutionaries based on charismatic themes; not on professionalism, but through ideologically based fanaticism.[125] These organizations appear less like a government and more like a gang that bands together for a common purpose. The bureaucracy of government is replaced by

groups that can take a number of forms. The ability to negotiate between groups becomes blurred. Locating and attacking these groups become difficult. If one of the true measures of a government's or alliance's worth is its ability to protect its constituency from harm, then the nature of future fighting will create many difficulties for conventional military forces and organized governments. The military effectiveness of the protective force is key to its relevance in today's world. However, a nation has other options.

If the terrorist or other group cannot be struck effectively, then another way to affect these groups must be sought. That might include targeting leaders of these factions. Similarly, groups that do not have sufficient resources to fight a conflict with large conventional forces have resorted to assassinations and other tactics that put national leaders at risk. These attacks, despite concerns about the legality of certain actions, may create an environment where brutal limited wars are conducted by both sides. Sanctions against attacks on previously protected works of art or religious sanctuaries will be disregarded as their political significance as targets is elevated above international law or concern.

If war becomes a brutal campaign of terror in which finding the true enemy is difficult, then what is the use of having a highly technological military? In short, Creveld believes that forces relying heavily on high technology (e.g., air forces) may be largely obsolete. Small-scaled wars will force militaries to shrink in size and force a change in roles and missions. These military forces may even disappear, their mission replaced by security businesses.[126] Armed forces, if they exist, will approximate those of a police force. These police forces may have to chase bands of revolutionaries, terrorists, or criminals, without regard to national borders. National borders will become more of an obstacle than a help, as will many national armies that may not be able to react or be equipped to stop a future enemy. These ponderous armies may not be able to protect their citizens and therefore become irrelevant. Similarly, their weapons may not be adaptable to this new warfare. Tanks and other sophisticated weapons that were aimed at specific targets may not be able to evolve to counter terrorism. Similarly, the expense of modern weapons today is so great, and its use against "rabble" so limited, that the question of even building them arises. Creveld sees the demise of the present military-technology base as the result of these changes. Instead, weapons must be small, mass-produced, cheap, and widely available. In short, war will devolve into unsophisticated combat, not the high technology combat predicted by many theorists.

Nonstate actors will dominate future war, according to Creveld. These actors will bring new motivations and reasons that conflict will occur. These nonstate actors will be centered in the developing world. However, these limited wars will not just stay in the developing world, but will spread like a cancer throughout the world. The Indian subcontinent, the Middle East, the Balkans, the former Soviet Union, and other regions are now embroiled in a wide range of conflicts that are not continuations of past conventional fighting, but more terroristic in nature. Whereas past state-to-state conflicts were fought over national interests, future conflict will also be motivated by interests, although they will be adjusted to particular nonstate objectives.

Conflicts over ideas and beliefs will dominate war. Unlike previous battles over resources or territories, these types of conflicts can be fought using capabilities and methods that differ greatly from conventional war. Instead, the real fight will be for the souls of men.[127] The fall of nationalism and the rise in ideological and religious fervor will focus

much of the direction of war, not through international or organizational motivations, but through the desires of individual leaders who will become the focus of decision making. The emphasis on individual motivations and interests not only make them difficult targets to fight, but also to anticipate their next move. Nations may have published national-security strategies, doctrines, and policies that may provide a hint on possible positions or rationales for action. Additionally, democratic nations normally have a wide-ranging public debate about vital public policy issues that an observer can view and interpret. Many nations that belong to international organizations, such as the United Nations, normally follow a charter and may resolve issues through the proclamation of a resolution. Opponents can gather a great amount of information through reading about the purpose, approach, and constraints that nations may have to operate within. This information can help one counter an opponent's moves and possibly defeat attack.

War is fought for many reasons. These interests and ideas are important for Creveld. However, he stresses the idea that war may be fought because people enjoy fighting. Creveld is careful to note that this observation is not an inherited trait. Individuals may feel that war is "fascinating" and find that war provides great satisfaction to some individuals. War not only serves power; war is power to many.[128] These observations may explain the explosion of conflicts today and the resulting changing nature of warfare.

War may be fought for no reason; rather, people will find reasons to justify fighting a war because its successful conclusion can transfer power to them. If man gains satisfaction from being able to kill and take the risk of being killed, how can the world stop war? The ability to make the risk of war unacceptable to individuals is necessary to end future conflict. But how one does this is very elusive. Also, the meaning of war and the "rules" of war will change. Ideas about sanctuary, surrender, who is a participant, and other issues may be altered or ignored. Fighting a war will involve great amounts of flexibility in thought and action to ensure a victory. The dynamic nature of war will force leaders to become even more innovative to counter it.

Military Thought and Theory in Summary

Throughout the history of man's use of warfare, one can see the changes in the type of military operations fought. As civilizations rose and spread, so did the kinds of warfare. Different factors, such as geography, culture, and the introduction of new types of weapons, changed the face of conflict. Some theorists, like Clausewitz or Sun Tzu, seem timeless and one can find application of their work in most types of conflict. Other writers seem limited to a particular age or a set of particular circumstances or technical advances. Theories dealing primarily with land warfare were represented well and became the basis for many generalized thoughts about warfare. However, new weapons were introduced to military operations over time that forced modification or creation of new theories. Advanced technology, such as the airplane, tank, and steam ship, allowed individuals to analyze war and adapt to these new capabilities. Writers observed, analyzed, and formulated their theories of war on the basis of these new inventions.

One theme that should emerge from these readings is that military theory and thought is very dynamic and subject to numerous influences. Political motivations, social changes, technology, economic motivations, and demographics affect the way people perceive how warfare should be fought and cause theorists to review conflict. Mao Ze-Dong and T.E. Lawrence faced different conditions than Clausewitz or Jomini did. Fighting as a guerrilla caused these commanders to change their views on the kind of warfare that was appropriate for the environment and situation of that time. The war-making environment has also changed with the ability to fight on the land, sea, air, and now space. How warfare will be fought in the future will depend on many conditions. The reasons for conflict, what groups will be involved, the environment, and future threat: all are considerations for a future military leader. The dynamic situations future leaders will face are considerably more complex than Clausewitz faced during the Napoleonic Wars—or are they? There are many enduring ideas that one can take from observations made centuries ago. The ideas about friction, leadership, war as a test of national will, and gaining public support are but a few of the many ideas that find relevance today.

Future military leaders may need to balance many traditional concepts and theories that have endured the passage of time with their relevance intact when planning their future military operations, but must always be alert to changes that may affect their ability to fight or the way a potential opponent may do so. Imagine the challenges that the U.S. Army had when they fought a difficult, unpopular hit-and-run guerrilla movement in the Pacific theater even though American soldiers were trained in conventional fighting. This was not a situation faced by commanders in Vietnam, but attempts to defeat an insurrection in the Philippines from 1899 to 1902. More than 100,000 American soldiers were used in some of the bloodiest campaigns against a guerrilla force in the history of the army. Army commanders were able to get support from the local populace, however, by improving community infrastructure and the economic lot of the nation. These actions turned popular support away from the guerrillas to the U.S. Army. The army was then able to conduct a series of well-coordinated offensives that defeated the guerrilla movement eventually. The United States may face a similar situation where its armed forces are initially unprepared for combat or operations against a particular foe. For example, warfare might include the use of terrorist attacks using weapons of mass destruction not only on the battlefield, but at home. How will military commanders react to a nonstate actor that moves silently and undetected among a host of nations that, directly or indirectly, support that movement? Are nations that provide limited sanctuary or resources at risk of a full retaliation of an in-kind weapon of mass destruction?

National leaders and military commanders will have to craft a military force, organization, and appropriate grand and military strategies to handle a multitude of threats while constrained by many factors, which may include the media or humanitarian concerns. Understanding and applying military forces are not factors that can be mastered easily, but the study of the reasons and conduct of war is a good start for a student. A career can be spent learning and developing military thought and theory: your journey will begin here. However, the effects of history, foreign culture, political motivations, history, economic constraints, and the ability to use new technology are also keys to understanding military thought and theory. The development of military theory and thought is not solely one of studying battles, but increasingly is becoming an interdisciplinary study.

Notes

1. A model is a representation of reality that explains an aspect of the real world, item, system, or process.
2. Strategic refers to activities directly affecting the national survival or the effective conduct of the overall war.
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7. Thucydides, 86.
8. Luginbill, 92.
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10. Sun Tzu, *The Art of War* (New York: Oxford University Press, 1971), 63.
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13. Ibid., 82–83.
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15. Ibid., 144.
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20. Gilbert, 25.
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22. Handel, 233.
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24. Carl von Clausewitz, *On War* (Princeton, NJ: Princeton University Press, 1989), 87.
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31. Martin van Creveld, *The Art of War : War and Military Thought* (London: Cassell, 2000), 107.
32. Jomini, 14.
33. Ibid., 29.
34. Handel, 70.
35. Jomini, 69.
36. Ibid., 89.
37. Ibid., 89.

38. Handel, 162.

39. Russel F. Weigley, *The American Way of War* (Bloomington: Indiana University Press, 1973), 82.

40. Creveld, 136.

41. Strachan, 103.

42. Helmuth von Moltke, "On Strategy" in *The Art of War in World History* (ed. Gerard Chaliand, Berkeley: University of California Press, 1994), 768.

43. Ibid., 769.

44. Gunther E. Rothenberg, "Moltke, Schlieffen, and the Doctrine of Strategic Envelopment" in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (ed. Peter Paret, Princeton, NJ: Princeton University Press, 1986), 300.

45. Ibid., 314.

46. Creveld, 201.

47. T.E. Lawrence, "Guerrilla Warfare" in *The Art of War in World History* (ed. Gerard Chaliand, Berkeley: University of California Press, 1994), 890.

48. Ibid., 883.

49. Ibid., 882.

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61. Mao, 70.

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66. Ibid., 28.

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88. Strachan, 155.

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94. B.H. Liddell Hart, *Strategy* (New York: Meridian, 1991), 346.

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3

DEVELOPING STRATEGY

Military theory and thought provides the foundation for leaders to devise plans of action to achieve certain national objectives or interests. Military actions usually are not independent activities that occur solely because of an officer's desire to conduct operations. Instead, military operations are, as Clausewitz described, a tool that one uses to further political objectives and interests: policy. How one should use the military in light of current policy and accomplish these objectives is an art: the application and the development of strategy. Although the focus of this discussion of strategy is on military operations, economic, political, and informational tools should not be excluded, but used in conjunction of the effort. Additionally, a military leader must also include an opponent's strengths, weaknesses, and political objectives in his planning effort. A range of plans and considerations that touch on many areas support the attainment of these national interests and objectives. National leaders and military officers use strategy not only in war, but increasingly in peacetime to ensure that multiple objectives are met. For example, they might use certain actions to prevent a war or conflict. Although military strategy is very important, strategy itself is not confined to military activities, but is a subset of a coordinated national effort to solve a problem: grand strategy.

Grand Strategy

Strategy is a complex and difficult construct that is always changing. Military strategy is a part of an overall plan: grand strategy, or the national security strategy. Executing a military strategy without an overall set of national objectives or goals to guide it and other instruments of power may create a chaotic series of actions that can lead to disaster. Focusing only on military means also might be inappropriate or counterproductive for the nation. Understanding the role of grand strategy and lower levels of strategies is important for a future military commander in his or her efforts to prepare and conduct for potential armed conflict, but also to support other applications of national power. For example, how will

future military leaders deal with homeland security? Although military forces provide valuable tactical operations and support against terrorism, working with nonmilitary staffs to fight domestic terrorism requires a broader view of strategy. Military members become involved in decisions about economic, immigration, jurisdictional, and legal issues.

Grand strategy allows the nation to incorporate all possible uses of available instruments of power. A grand strategy must take a long-range view of the nation's desires and wants that focuses on outcomes for the nation and other countries. Subordinate strategies are usually conducted over a shorter time horizon. Grand strategy deals with the conditions created after the end of a conflict: peace.[1] Grand strategy not only guides the individual development, operation, and results of subordinate strategies, but also orchestrates the combined use of these strategies. National leaders usually develop a grand strategy first that provides a foundation for the political, economic, military, and informational strategies that follow.

Strategists face events that are under the immediate control of their nation and others in which they are not directly involved in strategy development and implementation. The nation may want to hedge and use several different instruments of power in combination to support its grand strategy. Overreliance on a single instrument of power may be unwise if a foe can counter that instrument. Grand strategy orchestrates the actions of several strategies. During World War II, the national objectives included defeating the Axis powers and protecting the United States and her Allies. The United States relied on a number of avenues to accomplish these goals. Political strategies were developed to maintain alliances and use diplomatic efforts to support the nation's cause while isolating the Axis nations. Similarly, economic strategies were used to mobilize industry and distribute badly needed raw materials to Allied nations and hurt Germany, Japan, and Italy. Military strategy was also used to defeat the Axis powers' armed forces. These strategies were conducted in a coordinated effort. For example, military strategy had to support economic strategy and vice versa. The United States' and Britain's navies had to eliminate the threat of the German navy's U-boat and surface raiders from attacking Allied merchant ships that carried supplies and equipment from America to allies in Britain and the Soviet Union. Without this military support, the war effort in Britain and Russia would be slowed, and their maneuvers on the battlefield affected, because of the lack of weapons and munitions.

Grand strategy creates a vision of how a nation might view its efforts to conclude a peace or settlement to a situation or problem. National leadership considers the country's interests, objectives, policies, and agreements to decide how it will try to achieve or sustain these divergent factors. Policies include rules, regulations, and laws that the nation follows when it takes particular actions. Agreements might include international commitments to alliances or partnerships to conduct agreed-on operations under certain conditions in a dynamic environment. The nation must evaluate its available resources to consider how it will approach ways to meet its grand strategy. The nation has political, economic, military, physical, cultural, informational, and technological advantages that the nation's leaders can use and manipulate. Other unique characteristics can include the system of government, leadership quality, the national character, and political will that may influence a nation's capabilities. These intangible elements help shape the way a nation chooses and applies its instruments of power. For example, a democratic government may require broad public debate about particular issues, which may take time, but likewise can increase the national

commitment to a particular course of action. Specifically, democratic government, based on the rule of law, may require time to decide a policy question. Conversely, an authoritarian government that decides a course of action on the basis of a single person's decision may not have a cohesive public backing for its policies. Although decisive, such decision making may leave out important considerations because of a purposeful omission of alternatives, or lack of facts due to limited access to information and debate.

The nation might follow one of several possible grand strategies. These grand strategies, blueprints to achieve national interests, provide guidance for all actions. All have their own set of assumptions and views on national interests; what is important is how the nation fulfills its values and purpose. Following a particular grand strategy will affect the size of the military, decisions to get involved in conflict, changing priorities, new missions, and honoring international agreements.

Some possible grand strategies include isolationism, engagement, cooperative security, and primacy.[2] Isolationism seeks to avoid any foreign entanglements. The nation is not concerned with the activities of other countries, only their own. This means the nation requires a minimal defense. These nations seek limited contact with the world community.

Engagement policies stress peace among nations through active involvement with other nations. As an example, a nation can try to create a condition where the spread of free markets leads to democratic reforms. Normally, military intervention is selectively considered in this grand strategy. Engagement seeks to shape the international environment toward conditions advantageous to the nation through active relationships with allies and all other nations.

Cooperative security focuses on regional security through international consultation, reassurance, openness, and interdependence, rather than taking unilateral action. These actions are geared toward the use of a mutual understanding of a region's mutual security interests and problems.[3] Stability and the maintenance of an existing balance of power are central to cooperative security.

Primacy focuses on expanding hegemonic control of a region. Essentially, the nation takes control over a region. A nation gains power by building several strong instruments of power to dominate events over other states. Primacy seeks control over any competitor, or group of competitors, that threatens the actual or perceived security of a nation.

Building Grand Strategy

Military strategy is a part of a nation's overall ability to achieve particular goals or objectives, or grand strategy. The nation can use political, economic, informational, and military approaches to achieve success in selected areas. National leaders can develop strategies that use one or all of these approaches. Future military leaders need to understand how strategy is developed and the factors that influence its creation, and to understand and appreciate the other strategic tools available to use.

One can use a building-block approach to analyze a strategic process. The first step of grand strategy formulation starts with a set of national values. The values or beliefs of a nation tell us why we want to continue as a nation and defines what is important to us. In the United States we see many of these values in our Constitution, the Bill of Rights, and

the Declaration of Independence. Americans believe that the rule of law is key to a nation's existence. Democratic principles are ideals that shape the way we think and live. These beliefs help us define how we will support those values; they allow us to create appropriate national interests or objectives. In this case, national interests or objectives reflect the desired outcomes or state of affairs a nation wants to achieve, and the means chosen to pursue them. National interests and objectives provide the basis of all actions. A simple example of our national objectives is to ensure the security of the nation and its citizens. In the case of military interests, these requirements focus mostly on external threats.

These interests can be vital, or have an immediate impact that affects the existence of the nation. For example, the development and deployment of nuclear-armed intercontinental ballistic missiles would pose a threat to a nation that cannot defend or match the deployment of these weapons by a neighbor. Important interests that are not managed properly will create severe damage to the nation and directly affect the national interest. If a nation relies heavily of a particular raw material, such as oil, and is denied access to it, then its national economy and livelihood may be in danger of collapse. A peripheral interest may damage the nation, but the nation will survive. A peripheral interest may include humanitarian missions to help nations in need of food or emergency services.

The nation then needs to make a strategic appraisal of the situation that places its interest in context. This activity determines our national interest and its level; identifies and assesses any challenges to those interests; compares these appraisals to current national strategy or policy. A policy recommendation is then made about what we should do. This strategic appraisal includes not only the domestic situation facing the nation, but the international one as well. Intelligence data and analyses are important elements of this process, which includes evaluating threats that incorporate an assessment of an opponent's capabilities (What can they do?), intentions (What will they most likely do?), and their vulnerabilities (What are their weaknesses?).[4]

A nation's leadership then sets guidelines regarding national policy to develop a strategy to pursue its interests or objectives. Policy takes the form of a nation's direction or agreed-on way to reach an objective. Government agencies review and analyze national policy to determine their areas of expertise to support these activities. For example, a policy might include the avoidance of the first-use of nuclear weapons. The country might, however, retaliate against another state if it is attacked first with some type of weapon of mass destruction (e.g., chemical, biological, or nuclear device) or to ensure its national survival. The national policy provides a common frame of reference to develop specific plans to achieve national objectives and interests.

Nations then construct a grand strategy that includes political, economic, military, informational, and other considerations to support national interests. Grand strategy is not used only in times of crisis, but also in peacetime. Perhaps the nation wants to expand its influence around the world; one strategy is to use its economy to foster expanded trade and investment. This will require plans to increase production and lower costs of products to become more competitive with other nations. The nation may also encourage domestic and international sources of investment into a particular region or industry. Additionally, the government may want to ensure it keeps sea-lanes of communications open to its trading partners and neutral countries. This may require an active naval force operating in for-

eign hostile waters. Also, entry into a number of markets may require membership in certain economic alliances and global organizations. Diplomatic negotiation and advocacy can help gain admission into these alliances.

Military strategy is a subset of the grand strategy that focuses on military activities as a potential use of force to support the grand strategy. Grand strategy controls military strategy. Whereas military strategy frequently concentrates on using the armed forces to resolve conflict, grand strategy may implement other tools that try to achieve the same ends without necessarily using violence, or to gain support for the military, allowing it to become more effective. For example, a political strategy may include efforts to permit overflight rights of aircraft to cross a neutral country's borders to attack another nation, or to organize support or cooperation from several states. Military strategy should focus on the use of all available forces: air, ground, naval, and other support.

If the nation had unlimited resources, it could expand its capabilities and options endlessly to support its grand strategy. Unfortunately, military and other instruments of national power may not have sufficient or appropriate resources to accomplish many of their goals or objectives. Any plans must provide for a risk assessment or appraisal to determine whether the strategy is viable and where it may require additional resources. The nation should evaluate what resources are available to it, and what its opponents may have. This exercise may alter decisions made by a nation's leadership by considering the possibility of reducing the objectives, changing resource allocations, or modifying operating concepts. Nations may have to set their objectives or goals lower, or even eliminate them. A military force's leadership may also have to assume more of a chance of unanticipated events occuring. A nation without sufficient naval forces may have to abandon its efforts to become a maritime power or becoming a power only in selected areas by abandoning others. Countries could also try to remedy situations by reallocating or acquiring more resources. A state might turn its industrial power from manufacturing consumer goods to military materiel to strengthen its armed forces. Conversely, instead of a nation trying to build itself into a maritime power, it could try to build itself into an air or land power to dominate its neighbors. Although these options are not optimal to the country, they represent the reality of a lack of resources inherent to most problems facing various states. Conversely, after a risk assessment, the entire grand strategy might be deemed inappropriate because of a number of factors (too powerful foes or weak military forces).

The challenge for military officers is to determine how its forces and other resources can successfully meet national and military objectives and interests using military strategy. The process of strategy allows leaders to link overall objectives to their resources. If the nation does not have sufficient resources, strategies may need to be altered. Strategy, at least in the military sense, is a bridge that connects military power to political objectives.[5] Strategy is one part of a hierarchy of activities that result in planned actions with a particular goal or objective.

Strategy acts to link the nation's objectives and the available resources of a nation. Military leaders must try to maximize their ability to solve problems through strategy by developing *how* they will use assigned resources to master a situation. Although they need to keep this ultimate goal in mind, leaders need to analyze the resources available for the operation. In the past, a military leader only had to focus on actions conducted by armed forces. Today, military leaders must consider in more detail technological, economic, political,

physical, geographic, psychological, informational, and social factors that affect military operations and added integration of activities than in the past.

Military strategies require more coordination among divergent parties. For example, an attack on an opponent's information systems may have an impact far beyond any military operations. Worldwide communications may be affected, a situation that will create many unintended consequences. Commercial firms and neutral countries that would have supported the arrest of certain criminals may balk at the military controlling and shutting down segments of computer networks. Military strategy could affect a nation's economic or political strategies that support an overall national strategy. Military strategy is merely one of the pillars that a national leader uses to accomplish specific national objectives, goals, or interests.

Creating Strategy

Strategy is a plan that makes objectives accessible and possible to attain, and provides a method that combines resources and ideas to satisfy those objectives. Strategy is similar to a design that leaders can follow to put resources into motion: a series of actions, in certain order, to solve or avoid problems. Essentially, strategy includes the ends (objectives), ways (alternatives, concepts, and options), and means (resources) of a nation (see Figure 3.1).[6] Strategy is translated into military objectives, alternatives, and resources. Defining strategy as the ends, ways, and means provides a connection between the objectives and the instruments and options available to a military commander. Future strategists can use this
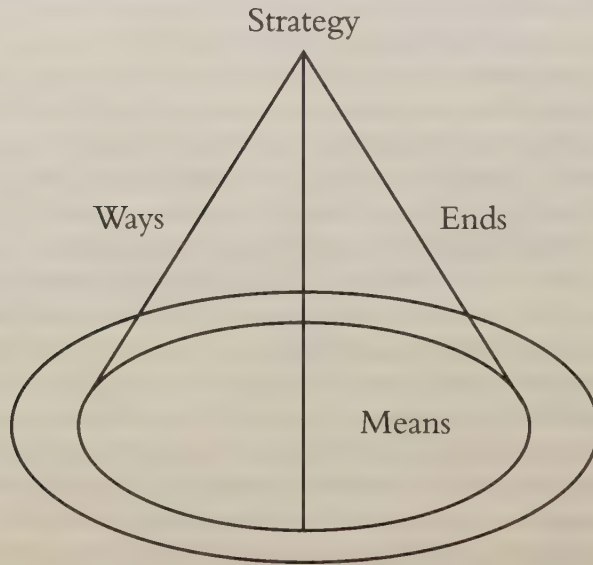

Figure 3.1   Ends, Ways, and Means

approach at almost any level of warfare, from a strategic to a tactical one. Military strategy is usually not considered just one all embracing product.

Normally, a nation creates a very general national military strategy. Particular strategies then are developed at a lower level and in more detail to meet specific national military strategy objectives. These strategies may be for regional (e.g., Middle East or Central Asian) or functional (e.g., nuclear deterrence or space operations) problems. These operational strategies provide direction for major actions or campaigns to satisfy the national military strategy. Operational strategies are further developed as much lower level strategies into more detailed plans that evolve into campaigns. For example, a nation fighting a major theater conflict can define and consider its objectives, alternatives, and resources for air, land, and sea operations. Next, a flight commander can identify appropriate ends, such as destroying a particular target by the air. The flight commander then can examine the alternatives available to destroy the target that may include attacking the target at night or in coordination with a combined ground and air attack mission. The officer then must consider the resources that will actually accomplish the operations, such as when and where air-to-ground munitions are to be released, or which aircraft are ready to fly the mission. This construct provides an inclusion of the most important factors in strategy development.

Notice that each element is dependent on the other. Ends require means. A nation cannot achieve its objective unless it has the capability to take action. If the nation wants to be able to move soldiers around the globe rapidly, it will need an appropriate fleet of jet aircraft to transport and sustain this force. Conversely, military capability should be based on requirements and objectives. If the nation wants to deter another state from attacking its borders, it could develop a nuclear force. The ends, ways, and means are essential elements that support each other, and the absence of any one of those factors would severely degrade the effectiveness of the military strategy for a nation.

Military ends provide the basis for actions taken. Military objectives serve as the rationale for these actions. These objectives are the desired result of any contemplated operation. These objectives should be clear, concise, and defined, and support the overall political objectives of the nation, as Clausewitz advocated. A challenge for military leaders is to translate the military objectives from the appropriate political ones. Under certain circumstances, national leaders may find the military instrument inappropriate for the occasion and any military strategy supporting or subordinate to other methods. For example, waging a campaign to change political ideologies in a rebellious region of a country may use very limited application by military forces, but informational or economic means may be more successful and less costly.

Strategy also depends on the ways, or the alternatives. These alternatives are based on concepts or ideas that shape options that a military commander to follow. These concepts can come from military theories, experiences, legal means, custom, or philosophies. Militaries frequently combine their theories, experiences, thoughts, and approaches into doctrine. This doctrine provides an accepted set of guidelines to plan and conduct military operations. These approaches use the ways or resources to achieve the proposed ends.

Ends and ways are useless without some way to accomplish these factors. The means or resources are the tools or instruments that military commanders can wield in the field. These forces allow military leaders to act and provide the capacity to meet the ends and means. A military commander needs to consider all military force capabilities available:

active, reserve, combat, support, other services, and allied national power. Additionally, the use of nonmilitary resources can also support military forces. If the military ends are long-term, such as developing a defense force, then the nation has time to develop a means to accomplish this end. Conversely, if the military end requires immediate action, then the military commander must use only existing forces, in methods that they might not have been designed. Creativity and consideration of new concepts are important to meet any new challenge.

What happens if there is an imbalance in the ends, ways, or means? Instead of the focus of strategy coming to a point, as in Figure 3.1, the picture becomes uncertain. In many cases, the means or resources are lacking. Military forces may not have sufficient weapons for a number of reasons, perhaps lack of funding or military units unavailable for action. Commanders may have to compensate for this imbalance and assume additional risk by modifying the ways or ends. Conversely, national leaders might have to take more "gambles" to achieve their objectives. This risk is inherent in almost any national security decision. How a future strategist deals with these risks will determine his or her success in many situations.

Military officers should not consider strategy as an inflexible plan either. Strategy, like military theory, provides guidance to commanders in the field. Events and actions by opponents may create requirements to modify or alter this design. Strategy is a dynamic process that continually evaluates actions and objectives and translates resources into particular movements. The dynamic environment of real world activities creates many opportunities and challenges for the officer. Great uncertainties and risk are characteristics of strategy development, but can force leaders to become more creative and innovative in their attempts to create strategies that are robust and able to withstand a wide range of modifications. Future officers must contend with a host of possible military environments that previous generations did not face: terrorists, peacekeeping operations, continual deployments, and so on.

In a perfect world, the military strategy developed to support national objectives and interests would have adequate resources, appropriate concepts or alternatives, and clear objectives. Unfortunately, world events can rapidly disintegrate into war, personalities change, political objectives are altered, and other factors affected by the environment can influence the ends, ways, and means for the nation. These modifications to the ends, ways, and means of military strategy may or may not allow military commanders to support the overall national security of the country. Unfortunately, states may not have the ability to rapidly modify the ends, ways, or means of the strategy process to support military strategy perfectly. If one or more of these elements are seriously impeded, then the ability of accomplishing military strategy is open to question. The nation must be able to balance its objectives, concepts, and resources to meet overall grand strategy; in effect, it must take a risk to balance these competing ideas.[7]

Every year, the president proposes a defense budget that, in his opinion, supports the proper national security strategy through a particular military strategy. These funds provide resources that purchase weapons, employ personnel, and conduct operations. The Congress authorizes and appropriates funds that it believes will support an appropriate and prudent military strategy. The difference, depending on one's point of view, may not provide sufficient resources for the military to conduct its strategy, or it may be too much. The

level of risk or uncertainty in meeting its responsibilities may be great or small, depending on the difference in actual and required resources. Similarly, getting contradictory objectives or limits to rules of engagement in combat can hinder military strategy.

One potential solution to compensate for these shortfalls is modifying the other elements used in a strategy. Military leaders might modify their objectives or try to provide additional concepts or alternatives to cover shortages in resources. For example, suppose a military force does not have sufficient tactical fighter support to conduct a rapid deployable force for contingency operations. Instead, options to use long-range bombers, other means to strike targets (e.g., cruise missiles from ships), or in-theater national or allied tactical aircraft might take the place of the option for a deployable force.

An example should illustrate how strategy might be developed by a nation. The United States faces many threats, from potential peer competitors to terrorist organizations. The nation may feel that it must ensure the viability and growth of its national economy. Military officials now must take this national objective and support it with a viable military strategy. One objective may be to defend international trade routes, including secure oceanic and air routes, from attack or harassment from any party. Military staffs can consider a number of concepts and alternatives. Options may include increased use of naval forces to patrol and defend particular sea-routes. This option would require a number of resources. The navy could accomplish this alternative if it had sufficient naval vessels (to include cruisers, destroyers, submarines, and aircraft carriers). Additionally, the navy may require overseas bases to support extended deployments by providing maintenance and logistics support. The acquisition of these resources may take years to attain and develop into operational-ready status. Combat-ready crews to operate these systems require extensive training and experience that takes time and competing resources. Similarly, protection of the United States must include defense and security of the homeland from terrorists intent on disrupting a range of activities.

Strategy is a highly innovative and dynamic process that can be altered by conditions day-to-day. This process becomes more complicated when military operations commence in war or when a potential opponent creates its own strategy that may create problems for one's own military strategy. Strategists must adapt to a number of circumstances that affect the conduct of a war. If strategy drives a military's conduct, then its success at meeting policy objectives and its effects are conditional on the quality of the strategy and its ability to meet changing conditions.

Many people confuse strategy—how a nation will combine objectives, concepts, and resources—and tactics. Think about tactics as the mechanics of putting an instrument into action. For example, tactics are concerned with the employment of singular units or activities in combat. A flight commander is interested in how his aircraft might use air-to-air missiles in combat. Tactics include the procedures of launching the air-to-air missile and its operational characteristics. Tactics become the "mechanics" of war. Conversely, strategy looks at planning how to use units in war or peace to support policy. In this case, strategy relies on individuals who must master tactics. In some respects, in today's age of instant communications and the effect of one precision-guided weapons on the nature of war, tactics may seriously affect strategy. The accidental bombing of an embassy or other culturally sensitive target, as happened when a B–2 dropped a weapon on the Chinese embassy in Yugoslavia during the 1999 Kosovo air campaign, can change a strategy. Air-power was restricted from attacking many targets in Yugoslavia. Some of the strategic

effects of airpower were limited because of tactics. Intelligence data, target determination, and bomb-damage assessment are a few of the tactics that played a part in the accidental bombing, ultimately affecting the overall airpower strategy in Kosovo. Media attention, rapid movement of weapons, political discontent among allies, constraints on targets, and the increased destructiveness of weapons can magnify one incident into a major situation that can alter the strategy of a war. Similarly, the nation with better tactics that it can execute flawlessly may still lose a war if its strategy is misguided. During the Vietnam war, American airpower pummeled North Vietnamese targets every day. Supply routes or troop concentrations were hit with precision (the air force, navy, and Marine Corps were very effective with their aircraft tactics), but one might wonder if they were the appropriate targets. Strategy and tactics are related and are not necessarily separable.

Kosovo 1999: An Example of Military Strategy

Military strategy, as you can see, is a complex process. Given enough time and effort, military officers can provide an ends-ways-means approach to many problems and situations. One example of employing these principles was the development of a military strategy to halt the ethnic cleansing of Albanians by Serb forces in the Kosovo region of Serbia, a part of the former Yugoslavia. The North Atlantic Treaty Organization (NATO) responded to these events by planning military operations to meet a set of conditions that were designed to bring peace and stability to the region, stop the deaths of innocent citizens and restore order to a chaotic situation. NATO military forces were assigned to the region with a definite ends, ways, and means in sight.

The conflict was born out of the breakup of Yugoslavia at the end of the Cold War. Serbian president Slobodan Milosevic attempted to maintain control of Kosovo despite a heavy majority of ethnic Albanians living in the area. Fighting between the Serbian military and police forces and the Kosovo Liberation Army (KLA), composed of ethnic Albanians, erupted into open warfare in 1998. Despite efforts by the United Nations (UN) to stop the violence, the bloodshed continued. Milosevic ignored a NATO-mandated cease-fire set for October 27, 1998, but later complied by pulling his police forces out of the contested area. Over 300,000 people were displaced because of the intense fighting. A peace conference was held with all sides present, but the Serbians refused to accept a peaceful settlement of the conflict.

Commander in Chief, European Command (EUCOM), General Wesley Clark started to plan military operations that would demonstrate NATO resolve and support their diplomatic efforts. The United States viewed the Serbian's actions as a clear violation of human rights that resulted in ethnic cleansing and forced refugee movements, and decided to intervene to stop the violence. Stopping unwarranted violence and helping people who are in need is based on philosophical and moral foundations of the country. Likewise, UN mandates to halt Serbian attacks followed the nation's desire to govern by the rule of law; the U.S. government hoped that military action would create more freedom for the region's citizenry.

The United States also had a larger national interest: peace in Europe. Over the years, American foreign policy stressed the need for a free and strong Europe. Political, military,

cultural, and economic ties to Europe are strong. Stability in Europe would further democratization efforts in eastern Europe and Russia. Open conflict in the Balkans could spread to other European areas where other peoples may seek independence within a sovereign nation, opening Europe to a series of civil wars. The United States had to get involved in Kosovo.

The United States had experience in conflicts throughout the Balkans. Fighting in Bosnia and other areas in the former Yugoslavia had included American, NATO, and UN forces in both combat and peacekeeping operations since the early 1990s. EUCOM had deployed forces in all of these cases. Diplomatic efforts in the region encountered many difficulties. The intransigence of certain parties, the bureaucratic complexities inherent in alliances, the difficulty of using ground forces in Bosnia, the risk of extended deployments, and ethnic hatred were all factors assessed by NATO and EUCOM. NATO member-countries, such as Britain, were concerned about being bogged down in a long ground-war. The Serbians had over 114,000 active duty soldiers with 1,400 artillery pieces and many armored vehicles, a formidable force.

The national policy for the United States was to bring stability to the region and support the United Nations to ensure peace in the area. The nation sought ways to enforce the UN resolution that required withdrawal of Serb forces in Kosovo and demilitarization of the area. The United States also wanted to safeguard and guarantee that refugees and displaced people were returned and settled back to Kosovo safely.

The national strategy used every available instrument of power. Political instruments focused on diplomatic means to bring about a peaceful settlement in the area. Economic pressure came from trade sanctions that limited Milosevic and his government from importing and exporting goods and services. The government also used the media and information campaigns to contest claims made by Milosevic and persuade the American public to support the international effort in Kosovo. Finally, the United States prepared its military forces already in the region and the United States to use force in the area.

The overall objective of Operation Allied Force, the NATO-led action, was to ensure that the Serbs complied with the UN resolution to bring peace to Kosovo. Secretary of Defense William Cohen provided the "ends" for the strategy: degrade and damage the military and security structure that President Milosevic used to depopulate and destroy the ethnic Albanian majority in Kosovo in his attempts to maintain the territory as another Serbian community. This objective was ambitious, and allowed military commanders to consider many concepts and alternatives. The United States had several options. They could use a ground force to push the Serbian forces out of Kosovo and then conduct peacekeeping operations. This option would require a massive move of not only US forces, but also as many as 18 other NATO countries' land forces to strike. This option would take time to assemble, organize, train, and transport forces. Additionally, a ground force might precipitate active-combat operations in Kosovo and subsequent heavy casualties among American, allied, and Serbian forces. However, ground forces would provide continual stability in the region and had a great chance of stopping further bloodshed.

Another alternative was to implement an air campaign to force Serb police and military forces out of Kosovo. Aircraft could be deployed swiftly and be operational in a minimal amount of time. Friendly casualties were limited to crews flying their missions. Aircraft were also able to strike a wide range of targets quickly. However, airpower was limited in

many respects. Weather, selection of targets, the possibility of accidental civilian casualties, and the inability to provide a permanent presence in Kosovo operations were conditions that NATO had to consider. Crafting a response commensurate to a few Serbian soldiers committing crimes might be difficult. How could airpower stop a few soldiers from murdering innocent civilians? The direct connection between an airpower response and an isolated incident on the ground would be hard to trace and demonstrate to the public.

An important factor in selecting any NATO alternative was to prove the alliance's ability to quickly demonstrate its resolve and unity to Milosevic. Both options contained the necessary resolve, a united multinational commitment, and action. The ability to maintain the NATO effort and the swift execution of the mission while avoiding friendly casualties was also essential. Ground units would take time to arrive and prepare for operations. NATO and EUCOM selected air strikes as the preferred option. However, could airpower alone force Milosevic to stop his ethnic-cleansing efforts and retreat?

General Clark then directed American air planners to develop potential air campaign strategies and plans to support the overall military strategy. Over 40 plans were developed, but several options most seriously vied for the attention of NATO. The first was an attack on known, fixed Serbian military targets by limited airpower resources. This option seemed to be symbolic at best. It would not stop Serbian military operations and Milosevic could conduct massive military operations in response. The targets for this alternative centered on military headquarters, maintenance facilities, supply, logistics, and communications targets. Another option was a massive air campaign that would target many sites over a short period of time. However, the massive campaign would require support from all NATO partners. A final option was a graduated-response strategy. This strategy used a multiphased approach to prepare the conditions for diplomatic efforts and to cripple the Serbian military's ability to conduct operations in Kosovo. The NATO air forces would achieve air superiority first and then conduct operations against the Serbian military. If Milosevic complied with the UN resolution, then NATO could throttle back its air campaign. If not, more targets would be struck and, hopefully, the increased pressure on Milosevic would add to his burden of command. Air planners would have to fine-tune operations to achieve the desired result. This alternative also depended on NATO resolve to allow air forces to move from a limited attack to a series of full-scale strikes ranging from attacks on Milosevic's political structure in Belgrade to artillery positions in Kosovo.

Stopping Serbian ground actions would require a massive, swift operation. The NATO air forces would require unanimous political support and few target constraints to unleash their airpower. The United States and other NATO air forces ultimately conducted a 78-day air campaign against Milosevic. The campaign required flexibility to expand target sets and restrict others as appropriate. Milosevic would ultimately sign a cease-fire and pullout Serbian forces from Kosovo. NATO and UN peacekeeping resources were introduced into the disputed areas and order was restored. The air campaign, a significant reason for Milosevic's retreat, was an intensive effort that demonstrated NATO strength, developed through strategy, in which the end, ways, and means were discussed and developed among all nations. Debate continues today about the airpower only strategy. Some argue that the eventual deployment of ground forces, which ultimately did not take action, forced Milosevic to surrender by threatening an invasion.

Political, Economic, and Informational Strategies

Military strategy is one means only that national leadership can take to solve an international problem. A country can use a combination of political, economic, informational, and military strategies to unleash all of a nation's power toward a particular end. These strategies can provide mutual support and open new opportunities for a state to exploit against an opponent. Additionally, military strategies may be inappropriate because of political constraints or because the opposing nation has a stronger military capability.

The United States uses several approaches to ensure the nation can settle international disputes. One of the first (and continuing) strategies to be used in a crisis is that of political tools. Political strategies have many options that a country can apply in a contested situation. These strategies can be unilateral or be employed in conjunction with other nation's actions. These strategies can include diplomatic efforts, treaties, state recognition, international organizations, and other measures.

Diplomacy is probably the best-known political instrument and is used frequently with other related strategies. Diplomats represent a nation and its causes. They negotiate settlements, advocate positions, provide signals and messages, and, in some instances, intimidate or coerce other groups. Negotiation involves resolution of crises and problems, ideally before military operations take place. If conflict continues or escalates, diplomats attempt to reach a common understanding on issues to settle the problem. Diplomacy also can be used to avoid or defuse future crises. Overall, diplomacy and political strategy can work in tandem with military strategy.

Political power can take other forms. Nations might bolster their position by improving their domestic, public, and international support. A government might advance its cause by gaining cooperation from the nation's public to accept emergency measures, requests for additional taxes, or other aid to fight a war. International assistance, from base landing-rights to military-force cooperation, may be sought through a political leader's ability to influence other government. International organizations are another source of aid. The United Nations might be used as a forum to air and resolve grievances to avoid war.

Economic power is an instrument of growing power and is becoming more integrated into political and military strategies. Economics involves the use and control of limited resources. Few countries rely totally on their own ability to provide all their own goods and services to satisfy consumer needs. Most countries conduct business with other nations by trading finished goods, services, or raw materials for similar products, or through investment in their trading partners. Economic power drives military power by providing the ability to purchase weapons and sustain a force structure. Conversely, military power influences and enhances economic power. Economic and military strategies can complement one another in many situations. National leaders can use trade policy, restrictions of trading via sanctions, fiscal and monetary policies, and foreign aid. These options can be applied to a number of situations where the military can support or be supported by these actions.

Informational power is becoming a more significant factor that supports national power. Today's world is connected digitally with a wide variety of informational networks that can provide a number of ways to influence people's behavior and shape impressions of situations. Countries that are run by dictatorships usually do not allow their people access

to divergent ideas; providing information to those people may result in opposition to certain policies. Additionally, gathering information for a nation's use about another country is also important. For example, data about a state's consumer needs may help another country plan for added trading of goods to that state and improve their own economic strength. Strategies to gather or disseminate information are a vital element to apply political, economic, and military means to an end.

Like military strategy, the use of political, economic, and informational strategies are affected by a number of things that the government may not control. There are international and domestic factors that can influence the development and interpretation of national values related to these instruments of power. International and external affects include laws, alliances, organizations, economic conditions, geography, threats, terrorism, and other influences. The United States might feel that its interests are best served if it continues economic sanctions against a particular state. However, world opinion and UN resolutions may force the country to moderate this position and seek redress in another manner. Domestic concerns may also moderate certain positions. Public attitudes, media coverage, competing domestic needs, government bureaucracies, politics, ethics, laws, and other influences can shape a strategy. Normally, in the United States, strategy is developed in the executive branch of government. This system of checks and balances, however slow, provides the opportunity for greater consensus that includes divergent views. Congressional leaders may disagree with certain approaches and eliminate the approach by reducing funding or enacting specific laws to weaken the approach.

Political, economic, and informational strategies, like military strategy, must support the nation's grand strategy. Different conditions and national capabilities will change the use of these strategies over time. Particular strategies may predominate depending on timing and reaction of a potential opponent, but may change suddenly as situations evolve. The election of a new president can force the nation to radically alter its perception of an ally or a foe and adjust the goal of its grand strategy accordingly. New technological advances or political alliances, for example, may force national leadership to modify the grand strategy and its subordinate approaches in political, economic, military, and informational strategies. Threats such as terrorism, information warfare, and other nontraditional types of conflict may force future military leaders to be very innovative in their approach to supporting tomorrow's grand strategies.

Developing a Strategy by Using the Principles of War

Developing strategy is hard. How does one start? Use of the general ideas of ends, ways, and means is a good approach. Where does one go from there? Military theorists throughout the ages have provided advice for waging war, so one place to start is to look at these theorists' ideas.

The fluid nature of warfare can create conditions that may appear so unique at first that conventional military theory and thought are irrelevant. Some ideas, however, provide enduring guidance to plan and conduct military operations. Theorists such as Sun Tzu, Jomini, Clausewitz, and many more have developed many common ideas. J.F.C. Fuller

identified and consolidated many of these ideas as principles of war. These principles can be used to plan, evaluate, educate, and form the basis for decisions about military operations. These same principles of war also help future strategists develop plans to support the nation's grand strategy.

Although the application of principles of war should not be rigid or dogmatic, many successful campaigns of the past have been waged through following these ideas. Many military conflicts were won or lost over the failures to adhere to one or more of these principles. The U.S. military branches have adopted the basic ideas of Fuller by using his principles of war in their respective doctrines. The U.S. Army especially was active in promoting Fuller's principles of war as a basis for strategic military planning. These principles of war should provide a student with a general overview of some of the important ideas that have dominated American military operations.

There are nine principles of war that have been generally accepted: objective, unity of command, offensive, mass, maneuver, economy of force, security, surprise, and simplicity. Each principle should not be considered in isolation of one another. Many of these principles provide mutual support to one another. For example, conducting an offensive is aided by the use of surprise. If one principle of war is ignored or covered inadequately in planning, it may affect not only other aspects of operations, but the entire military strategy as well.

Military strategy must ensure the "ends" of a grand strategy are met. Similarly, conducting military operations, whether it is a single aircraft flight or a major theater conflict, must have a common direction or goal. The principle of objective involves providing a common, definable purpose for military operations. The objective allows a military commander to consider the result that national leaders desire and design particular missions for his or her military force. These objectives should reflect decisive, clear, and attainable goals for a commander. Military strategy, whether it be at a national, theater, or lower level, should support the common objective and not contravene the attainment of that specific goal.

Once given an objective, a military force can fail to achieve its goal if control of the operation is left open to interpretation and direction by many sources. The principle of unity of command ensures operations take place under the direction of a single individual responsible for its success. A single commander can direct the energies and capabilities of all military forces toward the common objective much better than a fragmented command structure can. Complex and tightly scheduled events placed under one person who has the authority necessary to coordinate activities with other organizations or control subordinate units can complete a task much faster and more effectively than a committee or staff system could.

Clausewitz and other military theorists viewed the defensive as the strongest form of military operation rather than the offensive. However, the offensive form of combat wins wars. The offensive allows a military force to seize and retain the initiative. A military force that takes the offensive can help shape the condition or situation that may help a nation meet its national interests. The offensive also allows a military commander to choose the actions, time, place, initiative, and purpose not simply react to situations.

A military force can take the initiative and sustain an offensive, but a nation can maximize its chance of success by aiming its offensive at the weakest point of an enemy's defensive position. Executing this feat may require the military force to concentrate its few resources against this weak point. The force may use mass to strengthen its movements against an opponent at the appropriate time and at a decisive place. Conversely, if a military commander is

under attack, mass could help him or her by concentrating defensive forces to protect a position. Mass allows forces that do not have an overall quantitative or qualitative advantage over the enemy to potentially defeat a superior force opponent. A military force that concentrates its power also allows it to focus its purpose and better prepare for operations.

A related principle of war to mass is maneuver. Maneuver enables one to use mass to greatest effect. A military force must be able to position itself for combat or to mass itself in preparation for future combat. Proper maneuver can also allow a military force to defeat a foe without bloodshed. If a military force can surround an enemy, or position them in an area where they are vulnerable, then one might force the enemy to surrender. Maneuver depends on the timely, global, and total capacity to move a large force to conduct operations. Forces must be versatile and flexible enough to put themselves into a position to force a decision, reduce its vulnerability, or increase alternatives for future actions.

Military forces usually must contend with a lack of resources; they might not have an abundant amount of manpower or equipment to solve problems. A mix of the essential, minimal amount of resources can solve a problem, in many cases, as well as one with too many forces. This economy of force allows the release of excess forces to be used in other capacities. The use of overwhelming force is important, but the level of force that can support operations depends on several factors. The risk of failure, uncertainty about opponent operations, potential future concerns, and other issues affect the economy of force. Military commanders must be concerned about economizing; if too much of their strength and resources are used up in an initial assault, it may constrain a leader's flexibility to cover emergencies or unforeseen conditions, which may cause a failure on the battlefield. One can use economy of force in many ways. First, commanders can concentrate all of their forces on a primary theater and provide minimal, essential resources in secondary fields. Second, the military force may assign forces from critical areas to more immediately important areas, accepting a risk that they might be defeated in those underprotected areas.

Military forces are vulnerable to surprise attacks or threatened by movements. The probability of a successful attack against a foe is significantly enhanced if the enemy is caught unaware by an action. The principle of war of security allows the military force to reduce the chance of an enemy force altering the resources, plans, or operations in a situation and to react successfully to an operation. Security attempts to reduce vulnerability to enemy actions and allows commanders to use all of their assets by protecting people, institutions, information, and material from sabotage, direct attack, or natural disaster.

The opposite condition of security is surprise. A military force can sometimes increase its chance of operational success by conducting a surprise attack or conducting actions where an opponent has not anticipated the particular action chosen. Nations can use maneuver, mass, offensive, security, or a combination of these principles of war to increase the probability of surprise. If a country can attack a foe where they are unprepared, then an inferior force might achieve success against a superior force. Military forces that can move rapidly, act decisively, and engage the enemy successfully may provide a reasonable edge over an opponent. Commanders can use diversions, deception, and camouflage to confuse the enemy and conceal actions.

The last principle of war is simplicity. War is a complex activity that can be affected by a number of activities that are not controlled by a military commander. Enemy forces may take unexpected actions, or higher-level commanders may direct military forces to make unanticipated attacks. A deviation from a very detailed plan might cause serious confusion

among subordinate elements and unnecessary adjustments. Instead, a simple plan that invites flexibility and versatility allows a commander to adjust quickly to any number of actions affecting operations. Simplicity in planning allows commanders to provide direct and easily understood objectives, organization, planning, and operations for a battle or campaign. A relatively simple concept or plan also allows a military leader to create innovative solutions regarding difficult problems.

The nine principles of war should not be considered a checklist to follow. Each situation that a commander faces will probably require a unique blending and consideration of the principles of war. In some cases, a commander may want to emphasize one principle of war over another. For example, strategic surprise, if it is used as a subterfuge, may be appropriate in the offensive. Conversely, during negotiations with a hostile nation, a military commander may want to trumpet the use of a massive retaliatory counterattack if a foe is contemplating crossing a border. This would act as a deterrent, in hopes of preventing the initiation of an enemy attack.

Military commanders have failed in battles and campaigns when they have ignored or neglected to address adequately the principles of war. For example, the principle of security was not heeded in the Ardennes, where the Battle of the Bulge took place in December 1944. Allied military forces had pushed the German army steadily back toward Germany since the successful Normandy invasion in June. Allied military commanders believed that the Germans could no longer sustain the massive losses in the Western theater and the Russian front. Allied intelligence sources believed Germany would surrender before the end of December, but then Adolf Hitler ordered a surprise offensive to push the Americans out of the Ardennes, a heavily forested area in France, Belgium, and Luxembourg, and capture Antwerp, a major supply port. Hitler believed this massive strike would split the Allied forces and reenergize the German people. American forces' security was lax along the border and it did not consider initial German movements toward the battlefront as significant. Allied deployments were stretched thin along the border. The Germans attacked and almost succeeded in defeating American forces. Fortunately, a massive American counterattack, supported heavily by airpower, succeeded in blunting the attack; thereafter, German resistance against Allied forces in western Europe crumbled. The Battle of the Bulge, however, greatly slowed the Allied advances and delayed the end of the war. More important, American forces suffered massive casualties in the Ardennes campaign.

Modern technology, changes in a given threat, political considerations, and locations of future conflict will alter the face of war. The principles of war, although not to be considered laws, provide some proven concepts that future military leaders need to understand, apply, and perhaps defend against. How one applies these ideas will provide a challenge in planning, organizing, and leading military forces.

Critical Elements of Strategy

There are other important variables besides the principles of war that affect the conduct of military operations. These concerns include information about an opponent's intentions, capabilities, actions, intelligence data, technology, leadership, and the ability to supply and

maintain modern military forces. The military commander should consider the influence on all of these factors when planning training or actual combat operations. The use of these factors may also serve to multiply the combat power of the force. For example, two opposing forces might have engaged. A smaller, well-led force may be more motivated and better prepared for a conflict, and might be able to apply the principles of war better, than the larger force is and so defeat them. Similarly, a military force that possesses accurate knowledge about an enemy's intention can create countermeasures to defend against enemy actions.

Military force is not just about tanks, airplanes, or other weapons systems. Instead, there are many parts of a military force that can affect strategy and, ultimately, combat power. They can also influence future application of military force. The use of intelligence, technology, leadership, and logistics are a few of these factors that can expand this capability. For example, intelligence (the gathering and analysis of information) can increase the chance of a military strategy and plans succeeding by developing appropriate weapons. Conversely, a failure to develop the appropriate leadership for a nation's future may leave the country doomed to military failure.

Intelligence

Intelligence services are used in war and peace. Military commanders use a rational systematic process of gathering, organization, analysis, and distribution of particular information about an opponent. Intelligence can include operations against a specific target, but it is also used to deny the same thing happening to their own forces (counterintelligence). A military force that uses information, but does not routinely gather, analyze, or report it, is not considered to be using intelligence. Access to intelligence may be restricted to maintain security about potential operations.

The three stages of the intelligence process are the collection, analysis, and distribution of information to the appropriate actor. Collection actions can include espionage, gathering open information (e.g., reading foreign newspapers), or other activity. Many countries have focused on gathering information though technical means, such as space satellites and intercepting telecommunications signals, instead of relying on human intelligence assets. Analysis includes converting particular facts and observations into usable knowledge on which a commander can base a decision. Analysis is the hardest stage of the process. An intelligence analyst may have to prove a correlation or intent from data. The distribution or dissemination of intelligence involves routing particular information to the appropriate decision-makers who are responsible for taking action. These processes help provide a logical, rational basis to conduct military operations for national leadership and military commanders. Intelligence allows commanders to assess vulnerabilities and defend requirements as a basis for action. This rational framework eliminates much emotional debate when making decisions.

Technology

Technology can be defined as the application of science toward solving a particular problem, or as the available knowledge to produce instruments that serve a purpose. Technology involves specific ways to create products and the products themselves. The military is influenced by technology and its growth because of weapons-system development. Weapons

that are faster, more effective, easier to maintain, or cheaper can affect military strategy by increasing a commander's ability to effectively and efficiently strike a foe. The ability to fight wars is affected by the types of weapons that are used by military forces. These weapons depend on new and existing technologies. New weapons may defeat defenses once considered invulnerable or provide a new means to threaten a foe. Technology can alter strategy, force structure, doctrine, threats, and, potentially, the interests of a nation. These technologies can be developed for the military only or may come from civilian technologies.

Warfare throughout the ages has changed in part because of advances in technology. The introduction of gunpowder, railroads, machine guns, airplanes, tanks, nuclear weapons, and stealth technologies changed the face of war. The airplane allowed military commanders to strike targets deep within enemy-held territory. Before the airplane, ground forces had to defeat a foe by attacking successive levels of enemy positions before they could attempt to strike an enemy capital or other key location; now, airpower allows a nation to bomb an entire country quickly and avoid a potentially long ground campaign. The introduction of nuclear weapons, combined with the speed and reach of ballistic missiles, give a country devastating power. The strategies changed for nations that adopted these weapons and nations that were potentially threatened by rivals obtaining this new technology. War has become more deadly, potentially shorter, and fraught with surprise as nations rely on cutting-edge technology to develop more powerful ways to wage war.

Logistics

Logistics allows a nation's military to plan, prepare, maintain and repair military equipment, and to support personnel. These capabilities permit a military force to train, move, deploy, and fight. Logistics revolves around the coordination of materiel (equipment and commodities) used in combat. Materiel items used by the armed forces range from the actual weapons, such as tanks or pistols, to uniforms, food, gasoline, spare parts, and water. Logistics also involves the acquisition, storage, repair, and distribution of materiel items. This function includes a wide variety of activities and functions that must support a military force under conditions from war to peace. Logistical support must ensure air, ground, maritime, and aerospace forces can operate effectively and efficiently at all times. Ground forces may be called on to fight in deserts, jungles, mountains, or plains that are far from domestic bases. Logistics supplies these ingredients to fight a war in all of these diverse environments; without such support, military operations are not possible.

Although a military force may have modern jet fighters, missile-carrying naval patrol vessels, and heavy armored forces, it still need logistics. Weapons need to be repaired, guns run out of ammunition, soldiers have to eat, and supplies need to be sheltered. If these conditions are not met, a military force cannot sustain operations in most environments for any appreciable time period.

The strategist not only must consider many options to counter enemy military operations, but how they might be defeated. Military force deployments and the logistical support required for those operations are an extremely vital part of planning for contingencies. If the nation cannot adequately buy, repair, and supply sufficient materiel for operations, then strategists must consider other options. Logistics must provide timely, enduring, flexible, and effective support for military forces. In Operation Desert Storm, the United States

needed to supply a military force thousands of miles away in the Persian Gulf, a desert environment. Equipment and personnel were moved, fed, supplied, sheltered, and maintained. Logistical support allowed the USAF to drop approximately 69,000 tons of munitions in Operation Desert Storm, without which the success of coalition forces against Iraq would have been more time-consuming and costly in terms of human lives.

Leadership

The execution of a plan takes leadership, the art of influencing others toward some action. Military commanders must ensure they can lead their subordinates to accomplish a particular set of objectives or its grand strategy. A military force that has the best-trained and equipped force, but not leadership that can plan and direct its actions, will not be an effective force against an enemy and will fail to achieve its objectives. A military officer must be able to plan, coordinate, direct, and lead forces under his or her command.

Effective leadership rests partly on a commander's innate capabilities, and partly on environment, experience, education, society, and other factors. No one particular element typically dominates the development of leaders. Although some theorists may concentrate on a single factor, there are many outside influences on human character and decision making that can affect leadership. Similarly, the teaching of strategy may not necessarily produce great strategists. There is, however, a value to exposing subordinates to the rationale and foundations of strategies so that they can better support their senior leadership. These foundations will provide the building blocks for future strategists. Leadership also cannot be developed solely through a specific training program. Experience, for example, is very important as a practical laboratory to see a number of factors that can affect strategic or leadership outcomes at work.

The development of strategy is not an easy process. Few successful applications of military strategy occur without a number of interrelated factors or elements coming together. An individual or group of planners working without benefit of understanding the current situation or the status of military forces will probably not be as effective as a similar group that is coordinating its strategy with other instruments of power or other data, such as future projections of an opponent's military strength. Strategy is an interdisciplinary process that may require not only military knowledge, but technical and political expertise as well. Military strategy is also dynamic; conditions can change instantly and affect the assumptions about, and potential outcomes of, a strategy. Budding military officers and strategists must realize that considering the ends, ways, and means of a situation requires innovation and creativity to work. The number and range of threats facing the United States today and into the future is expanding. Threats not considered a national security issue in the past may surface to become one tomorrow. The United States military has become increasingly involved in missions that require special consideration in planning military forces. For example, drug interdiction or homeland security issues have raised constitutional questions. A military planner or strategist must consider a number of unique constraints and requirements that have not previously been a province of military operations. In the future, other issues may present themselves that may require an even greater amount of careful planning and strategy. Military strategy will become more intertwined with a host of other domestic tools and, if the nation continues to operate multilaterally with its alliances and temporary coalitions, a

military commander may have to deal with a number of conditions that were not originally considered in his or her planning.

Many of the principles and ideas about strategy will still be as applicable in the future as they were in ancient Greece. National and military leaders will still be concerned about the ends, ways, and, means that the country faces to solve a number of policy issues. The particular weapons and technologies may change, but the primacy of a nation's political objectives will still be in effect. Economic problems will still be a pressing concern for the nation and the world as a whole. The United States may have a strong economy, but it still relies on international trade for a significant portion of its raw materials and to market a large number of finished goods and services. This dynamic face of grand and military strategy is the challenge to future military leaders and strategists.

National Interests, Strategy, and Doctrine

How does a national interest, developed at the highest levels of government, get translated to a soldier in the field or pilot flying a transport plane? The road from a national policy to a tactical mission conducted by a group of individuals with a single mission has many levels, but they have one thing in common: they support a national interest. The path to many political objectives may be circuitous, but there is a system that traces our national interests, conditions, capabilities, threats, and experiences to battlefield tactics and results in a conflict or other activity.

What happens in the process as national objectives and interests are transformed into the actual results in combat has many influences. As we have seen earlier in the chapter, national objectives and interests are combined into a grand strategy that may look at different strategies to achieve a particular result or position. Political, military and economic strategies are then developed and implemented. Although their approaches may differ, these strategies are approaching a problem or concern to satisfy a common requirement or action. A complete, successful grand strategy should also include coordinated action between these strategies.

More important, national objectives and interests are not the only influences on a particular set of actions. Military forces and their organizations have their foundation in some factors that influence their application. Military forces are trained, equipped, and organized into units that provide selected capabilities. These capabilities provide a particular tool for a military commander to use in the event of a crisis. These military organizations take time and other resources to fully develop into an operationally ready force. Leadership is developed through training, experience, and so on. Individual soldiers, airmen, sailors, and Marines are trained to operate pieces of equipment or weapons. Orchestrating their operation and conduct takes careful thought. Imagine 100,000 combat-ready military members ready to start a combat operation. They may be preparing to take the offensive against an enemy. Military commanders may have a military strategy, but in some respects they are constrained and influenced by conditions in their environment.

These military members may be ready to perform their duties, but they were probably produced through a set of common experiences. For example, pilots enter a standard flight-training program that emphasizes a particular way to fly and how to react in certain

scenarios. These individuals also are trained to fly against common enemy targets and conduct operations using specific tactics. Their leadership frequently shares similar experiences, combat or otherwise, which can influence the way decisions are made. Experiences from past operations or field exercises also provide lessons learned from specific situations that can shape future decisions. These generally accepted principles of war, or doctrine, provide another factor that helps translate grand strategy into a plan for individual and small-unit action. Doctrine provides an authoritative source of guidance, but prudent judgment must be used in its application.

There are other factors that a military commander must consider in turning a national military strategy into a usable plan for combat. Military situations are very dynamic; everything from international to domestic concerns can affect the fighting of war, as was discussed earlier. Many of these same effects are present in the development of military plans. New threats, geography, weather, technology, equipment, domestic politics, media, rules of engagement, doctrine, and the uncertainty of enemy action are a few of the factors that influence on strategy formulation and the development of operational plans and particular military tactics to achieve specific results.

Strategy development does not focus only on the national interests and internal factors that can influence the development of a leader. Grand strategy can and does put the problem in context. The United States faces economic, political, military, geographic, and cultural influences. Strategy development can be seen as a system or process. The process includes particular inputs, products, effects, and a feedback system to correct or modify the system (see Figure 3.2).[8]

Strategic Environment

Political	Economic	Military	Operational Environment	Culture

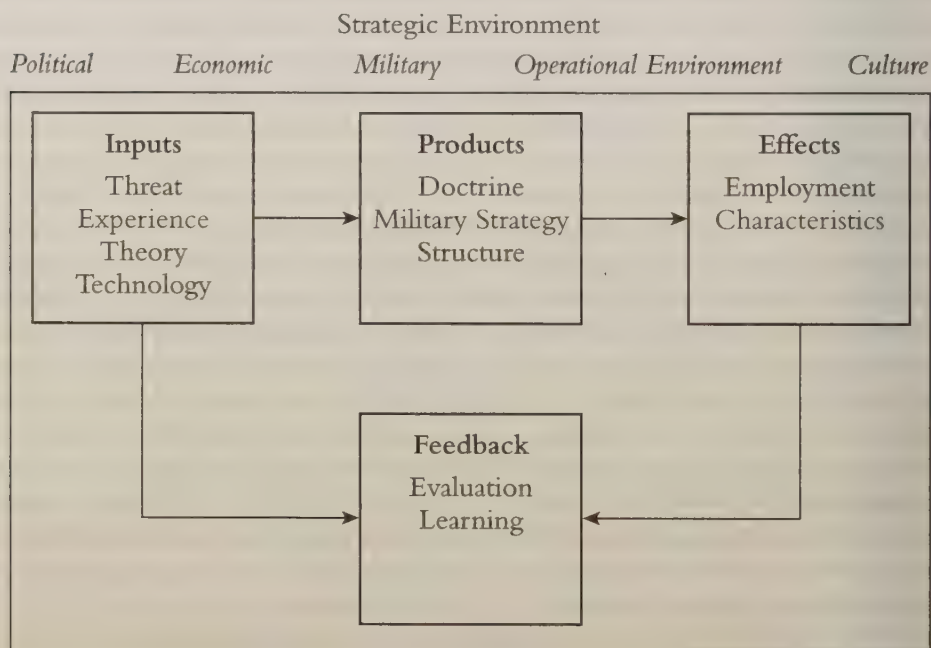| **Inputs**	**Products**	**Effects**
Threat	Doctrine	Employment
Experience	Military Strategy	Characteristics
Theory	Structure	
Technology		

Feedback

Evaluation
Learning

Figure 3.2   Strategy Process

Solving a particular problem or supporting a necessary national interest begins with certain internal factors. These inputs include threat, experience, theory, and technology. The United State military has been exposed to many types of military operations and campaigns, from general war to humanitarian missions. This may color the way a military or nation views a problem. For example, the nation that has experienced conventional war only may find fighting guerrilla movements difficult and may not be able to design an effective strategy against this threat. The focus on military theory also drives the views and concepts of national leaders. For example, during the Cold War, many military leaders placed great emphasis on nuclear deterrence theory: A nation might threaten to use nuclear weapons, or could be afraid to take an action because it fears a retaliatory nuclear attack. Conventional forces withered while strategic nuclear forces were the focus of national concern. Unfortunately, conventional warfare was not dead. U.S. military deployments continued around the world and the nation had difficulty realigning military priorities during the Vietnam War.

The nation is also affected by the resources available to conduct certain missions, or its technology. Technology, such as space satellite advances, can influence the reactions to a situation. For example, instant information can provide intelligence information about enemy movements, dispositions, and locations. This information may affect the way a nation positions its focus or attacks with the military against the enemy. The emphasis and reliance on space systems also make them targets of enemy action to disrupt or disable this capability.

This information produces some specific products. The inputs help frame doctrine, lower-level strategies, and force structure. The nation's or other countries' experiences help guide a military by providing approved principles and ways to think about problems. Doctrine provides an internal look at how one might deal with particular situations on the basis of knowledge and military experience.

Grand strategy is certainly influenced by doctrine, experience, theory, and technology. In many ways, however, the strategy is used at a national level, to focus the instruments of power to accomplish a particular political end. The military, operational, and lower-level strategies are influenced greatly from doctrine and the other policies. This is especially true at lower levels of strategy development that focuses on tactics.

National military strategy then helps the nation think about the resources required for the country's defense. A nation can develop a force structure commensurate with its situation. Suppose the nation decides it needs to become more proactive in deploying forces to trouble spots around the globe. Ground forces might have to develop a mobile, light focus, with the ability to deploy quickly and handle a wide range of contingencies. This requirement may force the nation to design particular weapons, such as transport aircraft to fly these units to trouble spots, and support structures.

Doctrine, military strategies, and force structure form an important relationship. These actions provide a framework in which to see how a nation can influence the process in which it prepares for war or to fight a limited conflict. The way the United States develops its doctrine, strategy, and force structure is a complex mix of activities. It is not static, although force structure does depend on organization, training, and the acquisition of weapons, and so may be more difficult to change entirely in the short-term.

Military leaders who are responsible for directly commanding forces in combat or other missions use the doctrine, strategy, and force structure to prepare for their missions;

their forces will be shaped by these ideas. Specifically, the military forces will mirror, or be modified by, the principles and ideals agreed to by national leadership and interpreted by military commanders. The force will take on particular employment characteristics that will affect its performance. One of the most important characteristics is the training of these forces. Training involves the dissemination of knowledge and techniques that support a particular objective. In this case, training a military to fight a conventional armor threat in a desert is very different than preparing it for urban fighting and peacekeeping missions in Eastern Europe. The preparation for desert warfare will affect the options available to a military commander. Although these units can be used in an urban setting, they may require additional training and different equipment to effectively operate in this new environment.

The military force's ability to conduct exercises and deployments are also affected by training and the approved guidance from national leadership. Exercises allow commanders to test ideas and war-fighting capabilities without actual combat. Simulated combat can provide valuable experience and preparation for units and individuals. Exercises for new military members who have not been involved in combat may provide the only experience operating with a unit before going to war. Deployments to forward operating locations can also acclimate units and individuals to local terrain and problems that they may face in the areas most likely to see combat.

Units that have trained, exercised, and deployed for particular missions can give a specific capability for a commander. Units that train together and provide support to one another may require that those units be kept together and deployed to a crisis in a certain order or combination. This outlook, or presentation, provides a known capability to a commander to use in given scenarios.

Finally, and more important, the forces created through this process may be injected into a combat situation ready for action. The ability to operate and succeed in combat is the supreme test of the abilities of a military force and its leaders. Planning, preparation, developed leadership, and fighting ability culminate in this situation. Combat will expose the successes or failures for these forces in a number of areas.

Combat or other mission activities are not the final step in strategy implementation. Doctrine, strategy, leadership development, training, exercises, and other actions are not static and are not done in isolation of real world events. Militaries learn from their own experiences and from those of others. Military history provides a field in which to learn about mistakes or successes that can force changes in planning or operations. These evaluations provide feedback to the strategy system process. This self-correcting process allows commanders to modify each step as necessary to adapt to changes in fact or to provide new capabilities.

These lessons taught by experience should not be lost on commanders. The organizations and their members should learn and incorporate such lessons into the planning, training, exercises, techniques, and other preparations for the next contingency or crisis. Without some level of learning from previous experiences, valuable information is lost to the dustbin of history.

This particular process provides an important message: Strategy is always changing and requires continual up-to-date information. Events and ideas change over time. National interests and objectives are not static and will adjust to national leadership, peoples' wants, threats, and other conditions that force the modification of not only what we think is

important, but how we will accomplish our goals. The feedback loop colors one's views of events and is a key feature that makes the process flexible enough to adjust to dynamic environments. Feedback gives information on how effective one's forces or actions were in meeting its needs. If a nation were not able or willing to adjust to changes, then its opponents would have an easier task countering its moves or defeating it in battle.

The country does need to balance these changes prudently with its grand strategy. A nation might prepare and fight a war that proves to have been an anomaly, and of little use to its future interests. For example, a country facing a large continental foe recently may have fought a guerrilla movement. Before the nation applies the lessons learned from the guerrilla war, it must evaluate the applicability of changing its requirements and force structure to its grand strategy and thereby create a military based on fighting an unconventional war. The nation must resist "fighting the next war like the last one." Although future military leadership inevitably will be influenced by recent wartime experience, the leadership needs to be aware that uncertainties over future fighting still exist, and have the foresight to design forces to meet new challenges.

The United States faces unique problems as the world's sole remaining superpower. It has diverse military, political, and economic interests around the globe. These concerns are not faced by the nation alone. Allies and friendly nations are also involved; so are a host of nations that are hostile to this country. The interconnection between military, political, informational, and economic interests cannot be separated. Issues have become increasingly clouded and will require much attention to solve. One of those elements will continue to be the development and implementation of strategy.

Notes

1. B.H. Liddell Hart, *Strategy* (New York: Meridian, 1991), 350.
2. Barry R. Posen and Andrew L. Ross, "Competing Visions for U.S. Grand Strategies" in *International Security, Vol. 21,* No. 3, 6.
3. Craig A. Synder, "Regional Security Structures" in *Contemporary Security and Strategy* (ed. Craig A. Synder, New York: Routledge, 1999), 108.
4. John, M. Collins, *Grand Strategy* (Annapolis, MD: Naval Institute Press, 1973), 9.
5. Colin S. Gray, *Modern Strategy* (Oxford: Oxford University Press, 1999), 19.
6. Arthur F. Lykke Jr., "Toward an Understanding of Military Strategy" in *Course 2 "War, National Policy and Strategy" Volume I* (Carlisle Barracks, PA: US Army War College, 2000), 342.
7. Ibid., 346.
8. Much of this discussion is credited to Dr. James M. Smith who developed a set of concepts called the "doctrine loop." Dr. Smith, a long-time instructor and researcher at the US Air Force Academy, has developed similar ideas involving strategic concepts.

4

PRINCIPLES OF WAR
ILLUSTRATED

The U.S. military must be ready to respond quickly to a number of contingencies that have profound effects on national interests and international relations. Twenty years ago, the nation's military was entrenched in central Europe, ready to counter a massive armored attack against Western Europe by the Soviet-led Warsaw Pact. By 1989, the Soviet Union saw the disintegration of her empire and the Warsaw Pact's irrelevance. In 1990, American military leadership faced a tremendous challenge: to fight a desert war against Iraq, thousands of miles from its base support and infrastructure. The commanders responsible for planning and conducting Operation Desert Storm had to apply the principles of war in innovative ways to put its experience training in Germany to fight the Soviet Union to use in the deserts of the Persian Gulf. On September 11, 2001, a massive terrorist attack on New York City and the Pentagon occurred that will challenge many leaders to develop a strategy to combat similar threats in the future.

Today, the international political climate is more transitory and uncertain than it was in 1990. Terrorists, ethnic conflicts, transnational crime, weapons of mass destruction, newly created countries, alliances, and age-old hatreds have spawned a new environment that will affect how wars are fought in the future. New enemies, peacekeeping responsibilities, the spread of technology, and other missions now challenge our nation; our existing force structure is taxed trying to satisfy these responsibilities. Future military leaders will probably encounter a new, equally difficult, set of problems to solve. New theories may be created or old ones discredited, but, in general, the principles of war and their applications are more enduring.

The principles of war will be described in this chapter by illustrating J.F.C. Fuller's view of these ideals. The historical examples chosen provide a chance to explore the principles in more detail than in the previous chapter. Successes as well as failures are illustrated by these events and provide a balance in the proper use of the principles of war.

These principles of war provide a foundation for a myriad of activities, from planning to actual command of military operations. Increasingly, the use of military power requires land, sea, air, and space forces to fight as one. The principles of war are applicable, in most

cases, to the combined use of these forces. Learning the principles' different aspects and definitions is not enough. Their application, in a new international environment that contains forces that can affect many areas, is the challenge that future military leaders must meet. The United States will also fight with coalition and alliance partners that will also demand innovative approaches to solve real problems. A solid grounding in these principles of war is necessary to better understand the business of warfighting.

Military history provides a rich arena to gather a number of relevant illustrations to Fuller's principles of war. History gives us the benefit of learning about a situation and debating the merits of decision with a lens to the past. These lessons provide a way to debate hypothetical questions and explore how they were handled in the past. Although history focuses these discussions, it does not guarantee that following the same approach again will result in a predictable outcome. Environments, forces, conditions, threats, objectives, leadership, public opinion, and a host of differences between a current and past situation can create unique solutions between similar, but inexact, problems.

A successful student will examine the illustrations and consider any similarities or differences to a current situation. A more important concern will be the application of the insights gained from this study. A military member familiar with the principle of unity of command may one day face a situation in which leadership is fragmented into national, theater, and component commands. How the individual corrects or copes with this condition may mean the difference between winning and losing a war. Simple solutions, or the consideration of seemingly elementary concerns, have led to overwhelming success in the field. Conversely, neglecting even rudimentary principles of war has spelled abject failure for a campaign, and its ability to meet a national objective.

The following cases introduce the ideas and concepts of the principles of war. Each principle first is defined and then illustrated with a short example, which includes land, sea, and air battles. The universal nature of Fuller's principles of war is demonstrated by their applications to these different settings and events.

Objective

Military commanders, whether planning a large-scale campaign or a simple one-person mission, must ensure that its limited military force has a common, underlying purpose, or objective. Military forces that have an agreed-on objective can coordinate their efforts among multiple and disparate organizations to achieve that purpose. Starting with this focus allows commanders to evaluate whether they have accomplished their mission or if further action is warranted given a particular objective. How national or military leaders develop and transmit their objectives is important because subordinates will produce supporting goals based on the main objective. If the objectives are unclear, contradictory, or impossible to achieve, then military success will be a fleeting dream.

During the Vietnam War, a succession of presidents and government officials presented American military leaders with objectives that changed frequently throughout the conflict. Commanders questioned whether the purpose of the United States' involvement was to contain communist expansion in southeast Asia, defend the government of the

Vietnam and Southeast Asia.

Republic of Vietnam (RVN), South Vietnam, punish the government of North Vietnam, or stabilize the region to allow eventual American withdrawal from the area.

The U.S. government reevaluated its reasons for going to war and its continued support of the South Vietnamese people throughout the Vietnam War. One of the earliest campaigns that the United States conducted was the Rolling Thunder air campaign. This campaign was designed to modify North Vietnamese behavior by providing immediate punishment to its government for any transgression against South Vietnamese or American interests. The purpose of this campaign was to put gradual pressure on the North Vietnamese government to stop attacks by its surrogate guerrilla forces in the south, the Viet Cong, and its own forces from threatening any military incursions into RVN-controlled territory. Bombing missions inflicted increasing levels of pain on the North Vietnamese so that they would stop certain behaviors, such as conducting raids on RVN and American installations. If the United States could damage the North Vietnamese's limited number of industrial and transportation capabilities, then a negotiated peaceful settlement to the conflict might be possible. Unfortunately, the North Vietnamese and Viet Cong did not rely on their few industries or primitive transportation systems to conduct war.

Admiral Thomas H. Moorer, Chief of Naval Operations, identified three specific goals for Rolling Thunder: to stop the flow of materials from outside North Vietnam; to destroy North Vietnam's war-making and supporting capability; and to stop the flow of men and materiel into South Vietnam.[1]

U.S. government officials believed the North Vietnamese would recognize the folly of their ways and cease any aggression in the face of swift reprisal. The Johnson administration did not realize that the North Vietnamese might respond to American incentives or punishments in a different manner. Secretary of Defense Robert S. McNamara advocated the use of a massive threat of additional bombing if the Vietnamese did not cooperate. However, he also stressed that military forces were to avoid any undo risks and costs in military operations in terms of casualties and aircraft losses.[2] If the North Vietnamese did not cooperate, then the United States would have to increase the intensity of its bombing raids or widen the target list, which most certainly would have increased the war's risks and costs by increasing the chance of widening the conflict. The United States faced a quandary; how much force was to be applied to get the North Vietnamese to submit to peaceful relations with the south? Too much force might provide ammunition for the Soviet Union or the People's Republic of China (PRC) to enter the war or invite public pressure to stop supporting South Vietnam because of increased American casualties. The PRC had intervened in the Korean War and caused American and UN forces to fight a slow war of attrition. Too little force might not send a strong message to the North Vietnamese government and make the United States appear weak and indecisive, not only in Southeast Asia, but also globally.

Although the objectives seemed reasonable to many in Washington, several airmen viewed Rolling Thunder as an open-ended air campaign to bomb only a selected set of targets throughout North Vietnam with no real end in sight. The only time the United States would bomb targets was in reaction to an act of North Vietnamese aggression. Initiative was lost and the United States would fail to unleash its massive military strength to its advantage. The objective for Rolling Thunder seemed to concentrate on deterrence. The United States was attempting to change the behavior of the North Vietnamese and

demonstrate its resolve to North Vietnam's supporters, the Soviet Union and the PRC. Rolling Thunder could also be seen as a signal to the South Vietnamese and the rest of the world that the United States would not avoid its commitments to support countries that were in danger of being taken over by any communist insurgency. The number and types of targets in North Vietnam were limited. The country was not an industrial power; it was primarily an agrarian society. The United States also excluded many targets for humanitarian reasons or because striking the target might result in potential civilian casualties from less precise bombing. The North Vietnamese would eventually use this self-imposed constraint to locate ammunition depots near hospitals or antiaircraft weapons near dams or dikes. Sanctuaries, such as airfields and harbors, also confounded military commanders.

Operation Rolling Thunder was launched on March 2, 1965. American air forces had struck targets in North Vietnam on two occasions in February in retaliation to a Viet Cong attack on a United States Air Force (USAF) installation in Pleiku and, later, an enlisted barracks in Qui Nhon. Both attacks resulted in the deaths of American servicemen. President Lyndon B. Johnson, through McNamara, authorized a limited air campaign as a reprisal for the attacks. Johnson was concerned about widening the conflict by increasing the commitment of additional American combat forces; air attacks could limit potential casualties and provide a measured, contained air campaign that would destroy targets south of the 19th parallel in North Vietnam. American flying crews, which included USAF, United States Navy (USN), and United States Marine Corps (USMC) along with South Vietnamese air force crews, flew a few missions per week with limited numbers of aircraft to destroy targets. The North Vietnamese responded by building an air defense system composed of

President Lyndon Johnson (left) and his Secretary of Defense, Robert McNamara (right), agonized over expansion of the Vietnam War. *Source:* National Archives.

F–105 fighter-bombers, the mainstay of attacks on North Vietnam
during Operation Rolling Thunder. *Source:* Department of Defense.

surface-to-air missiles (SAMs), antiaircraft artillery (AAA), fighter-interceptors, radar, and a centralized command and control system to defeat the American air initiative.

The commanders in the field did not control target selection; targets were instead chosen by Johnson, McNamara, and others in Washington. Aircrews were sent to attack locations on the basis of directions from the National Security Council in Washington. Target lists were sent through their respective commands to individual wings for execution. Although commanders from the USAF's Seventh and the USN's Task Force 77 made target recommendations, they were forced to send these target choices through the Commander in Chief, Pacific (CINCPAC), and to the office of Secretary of Defense to assess the military and political impact of the target.

The recommendations were then evaluated by the State Department and finally sent back to the Joint Chiefs of Staff for final review. The president and McNamara made the final selection about the choice of targets, tactics, timing, number of aircraft, and the ordnance used for a mission.[3] The presidential selections were normally made during a Tuesday luncheon attended by the president, secretaries of state and defense, and the special assistant for international security affairs, and, on occasion, the chairman of the Joint Chiefs of Staff—the only military member invited.[4] Trying to send a convoluted message through bombing and attempting to avoid further conflict clouded the objective of the

mission. Control from Washington, without much coordination by units in the field, which could provide valuable input on target selection or evaluation, made the attainment of the objective more difficult.

The United States used a campaign of bombing radar sites, railroad marshaling lines, roads, bridges, industrial, economic, and limited military targets. The objective of the campaign was to persuade the North Vietnamese leadership to settle their differences with the South Vietnamese by negotiation, diplomacy, or peaceful means. Johnson and McNamara tried to achieve their strategic objective by using tactical missions; specifically, interdiction sorties. Interdiction missions attempt to stop the flow of supplies and resources to the enemy before they can be used in combat by cutting supply routes and targeting transportation centers.

The United States had a list of 94 known targets selected in North Vietnam for attack in Rolling Thunder. There were few options for USAF and USN/USMC crews to attack alternative targets or to select particular munitions. Additionally, certain areas were put off-limits to air attack: the United States had given sanctuary to selected cities, such as the North Vietnamese capital of Hanoi, certain factories, electrical power plants, dams, dikes, airfields, and Haiphong Harbor, the major port of entry for war materials into Vietnam. These areas were protected, in most cases, to avoid accidentally hitting Soviet or communist Chinese personnel or their vessels or to avoid unnecessary civilian casualties. Initial restrictions on tactics included a requirement that aircraft that could not hit their targets were to drop their bombs in the ocean, although this constraint was soon lifted at the start of Rolling Thunder.[5]

Field commanders were given limited flexibility, but their options did increase as the campaign expanded. Missions were designated with a primary target and a weather alternative. Similarly, field commanders were given some leeway to conduct attacks within a window of time instead of on a fixed date. Officials in Washington also authorized armed reconnaissance missions that allowed aircraft to patrol areas and attack targets of opportunity, such as enemy trucks or railroad cars, without prior authorization.

The North Vietnamese responded by building a complex web of air-defense systems. By spring 1965, SAM launch sites were built around the country. USAF and USN reconnaissance aircraft were taking photographs of the sites under construction. United States policy was to wait to destroy the targets until the sites were operational and ready to strike American aircraft.[6] Frequently, this meant getting radar signals from active SAM or AAA radar transmitters, or seeing actual SAMs launched against American aircraft. The North Vietnamese also used ground-intercept controlled flights of MIG–17, MIG–19, and MIG–21 interceptor aircraft to pursue and shoot down USAF and USN planes. These North Vietnamese aircraft were immune to air strikes on the ground because of the self-imposed American policy of not bombing airfields at this time. The last element of North Vietnamese defenses was AAA. These weapons were dispersed around possible targets and caused the majority of American aircraft losses in the war.

Along with the enemy defenses, limited attacks, sanctuaries, and target-selection process, the U.S. government used bombing pauses to encourage the enemy to reflect on or back down from growing American military power.[7] Johnson authorized suspensions of bombing attacks on Christmas and the Vietnamese Tet holiday celebrations in 1966. The American air effort was to strike only a limited number of targets, but the war persisted. By

1967, Johnson widened the war. Rolling Thunder changed objectives. Instead of concentrating on the flow of materials into the South, targets north of the 19th parallel in North Vietnam now were authorized. The air war's new directive was to disrupt the flow of materials from China, isolate Haiphong Harbor, conduct attacks against enemy airfields and bridges, lay mines throughout inland waterways, and attack more industrial targets.[8]

The United States was gaining little from this heavily publicized air campaign.[9] The North Vietnamese were still being supplied with oil, weapons, and other materials from the PRC and the Soviet Union, and the Viet Cong continued to operate throughout South Vietnam. Their logistical support of food, medicine, and other sundries came from North Vietnam via a complex supply network that ran through Cambodia and Laos. The Viet Cong used homemade weapons, or ones that were captured from South Vietnamese or American troops, or salvaged unexploded ordnance. In response, the United States started a slow, steady buildup of ground forces that were first deployed to protect American air bases and advisors, then to conduct ground operations against the Viet Cong. The limited nature of Rolling Thunder in 1965 began to change, and it assumed a larger role in the war. During 1965 (given that the campaign started in March), the United States authorized 55,000 aircraft sorties; by 1966 it was up to 110,000 missions and climbing.[10] Clearly, the campaign was not working. American efforts were intensified, but Rolling

F–100s were used extensively in South Vietnam during Operation Rolling Thunder.
Source: Department of Defense.

Thunder's objectives were muted as the North Vietnamese and the Viet Cong sought ways to avoid the American bombing campaign and continue the onslaught against South Vietnam.

Rolling Thunder collapsed in 1968. Johnson had hoped that the campaign would persuade North Vietnam to leave the South alone. On April 1, Johnson directed all bombing to cease north of the 19th parallel; by November 1, all bombing over the North was halted in hopes of encouraging peace negotiations to start. Rolling Thunder's objectives were to force the North Vietnamese to de-escalate the level of violence in the South and to act as a signal to stop attacks or cooperate in certain ways. Both failed. The U.S. government also tried to keep a flagging RVN from falling to the communists, but it apparently floundered.

There was opposition to Rolling Thunder from several parties. General Curtis E. LeMay, then-Chief of Staff of the Air Force, believed no real military objectives had been developed for the campaign.[11] Rolling Thunder, in his view, wasted valuable airpower resources. Military targets should have been considered the top priority because they would directly affect the enemy forces in the field and meet the political objective of stopping North Vietnamese. Similarly, instead of a graduated response that had to be fine-tuned to send a message, a short and intense campaign of bombing would better serve Rolling Thunder's objective to force the North Vietnamese from interfering with the South. Additionally, a slow, gradual campaign would force aircrews to face mounting opposition by SAMs, AAA, and MIGs. During the campaign, the USAF flew over 166,000 tactical fighter sorties and the Navy contributed another 144,500 flights. Unfortunately, the USAF lost over 526 aircraft during Rolling Thunder: MIGs downed 42, SAMs brought down 54 planes, and AAA claimed the remainder.[12] An intense bombing campaign would eliminate these targets and free up resources to support combat operations throughout RVN.

Admiral U.S. Grant Sharp, CINCPAC during Rolling Thunder, believed the campaign failed in its objective to increase pressure on the North Vietnamese government. He felt that too few "lucrative" targets were authorized; the number of armed reconnaissance sorties had remained constant throughout the campaign, which translated to less pressure on the North Vietnamese as attacks continued.[13] There seemed to be no incentive for the North Vietnamese to cooperate with the United States. The United States overestimated the value of the limited industrial targets in North Vietnam and underestimated the resolve and will of her people to withstand Rolling Thunder.[14]

The ultimate goal and objective of the air campaign was clouded from the start and remained overcast throughout its stormy three-year life. Inadequate communication and consensus about Rolling Thunder's objective among political and military leadership created problems in the field. President Johnson changed the objectives of Rolling Thunder during the campaign and did not heed the advice of his military leadership. Conversely, the objective was confusing to military commanders and they had a difficult time translating it into a workable program. The intended targets of the campaign, the North Vietnamese and the Viet Cong, were not influenced by Rolling Thunder's objectives. Unfortunately, American military power was rendered ineffective and many aircrews paid with their lives or were forced to suffer in prison camps because of the failure to set the right objective.

Unity of Command

Today, the United States fights wars with unified commands that supports coordinated and centralized leadership of military forces. Military forces may have a common objective, but if their command encounters confusion or contradictory guidance, then the operation of those forces may fail to accomplish that objective. The command of forces must work in concert with divergent military forces, from national objectives developed by the highest level of national leadership to an individual service member, which requires careful planning, timing, and the blending of unique characteristics of the branch forces.

The reliance on joint forces in future conflict will place pressure on the unity of command. Air, land, maritime, and, eventually, aerospace forces will vie to become a joint military force that uses all of their divergent capabilities. The unity of command must also ensure that all of its activities go toward accomplishing its common objective. However, certain military capabilities may have unique modes of operation that may influence how its action affects other forces. For example, land-based aircraft that may not be in close proximity of a military target would have to launch an attack earlier, and would probably not have as many turnaround sorties, than would naval aircraft launched from a carrier force. On the other hand, land-based aircraft might be able to carry a larger payload than their naval counterparts who can get closer to certain targets. These differences might influence a joint commander to use his or her available military assets in a less-than-optimal manner.

President Ronald Reagan and his staff are briefed on Operation El Dorado Canyon.
Source: Department of Defense.

In 1986, the United States and the government of Libya were at odds. President Ronald Reagan accused the Libyan government of state-sponsored terrorist acts against American service members in Germany and other actions around the world. Reagan would later authorize a military air strike in retaliation to a bombing of a disco in Berlin, Germany. The American response, Operation El Dorado Canyon, would illustrate the complexity and difficulty of command and control of a joint operation that used USAF land-based aircraft stationed in the United Kingdom and USN carrier-aircraft from the Sixth Fleet stationed off the Libyan coast. General Dynamics F–111F Aardvark fighter-bombers would have to fly from Britain along the eastern edge of the Atlantic Ocean, through the straits of Gibraltar, and then on to Libya. Navy aircraft would destroy Libyan command and control, air defenses, and a number of other targets with split-second timing in conjunction with the F–111F strike. Although the operation required close timing and careful planning, there were concerns about the unity of command of this limited strike. This complex operation may provide a model of future contingency operations for small-scale air strikes and the significance of using joint forces.

Problems between the United States and Libya could be traced back to Colonel Muammar Qadhafi's overthrow of the Libyan monarchy in 1969. Qadhafi, with anti–Western fervor, had demanded the withdrawal of all British and American military forces stationed in Libya. Over the years, Qadhafi allegedly supported a number of terrorist groups that struck several targets, including the cruise ship *Achille Lauro,* the hijacking of which resulted in the death of an American tourist. Problems between the two nations started to heat up after this incident. Confrontations between the Libyan air force and the Sixth Fleet aircraft (two USN F–14 Tomcats shot down two Libyan SU–22s), terrorist attacks on airports in Rome and Vienna, placing a bomb on an American TWA jetliner, and a host of international claims further divided the two nations.

As a result, Qadhafi would later declare the Gulf of Sidra as sovereign Libyan territory, despite international conventions that allowed freedom of navigation in the area. The Libyan government even called the area the "Line of Death." Qadhafi vowed to attack and destroy any ships in the area. The USN's Sixth Fleet prepared for a number of exercises near the "Line of Death." On March 14, 1986, President Reagan authorized the navy to cross into the Gulf of Sidra.[15] Three carriers (USS *America,* USS *Saratoga,* and USS *Coral Sea*) participated in the exercise and were put on a war footing in case of problems with the Libyans.

Naval aircraft flying within the gulf were fired on by Libyan air defenses. SAM–2 and SAM–5 missiles were launched against American aircraft; all missed. In response, the SAM sites were attacked and several small Libyan naval vessels were destroyed. Carrier-based A7E Corsair II attack aircraft launched high-speed antiradiation missiles (HARMs) against the Libyan SAM-radar sites. Likewise, Grumman A–6E Intruder bombers destroyed a Combattante II patrol boat and a Nanuchka II corvette. The USS *Yorktown* sank a third ship. Qadhafi responded with more terrorist attacks, leading to the bombing of the disco in Berlin.

Planning for a strike against Libya preceded the disco attack; it had started in December 1985 after the attacks on the airports in Vienna and Rome that had killed several people.[16] Operation El Dorado Canyon was initiated to respond to these events and the growing number of terrorist incidents. The "Line of Death" incident and the disco bombing put more emphasis on the project. The Commander in Chief, United States Forces in

Europe (USCINCEUR), U.S. Army General Bernard W. Rogers, in Stuttgart, Germany, was placed in overall command but delegated detailed planning to the commander of the Sixth Fleet and the Commander in Chief, United States Air Forces in Europe (CIN-CUSAFE). USCINCEUR recommended two sets of targets. One included sites near Tripoli, the Libyan capital, that included Qadhafi's command headquarters, a suspected terrorist training facility, and a military barracks. This target set was assigned to CIN-CUSAFE, General Charles L. Donnelly Jr. The other target set was located near Benghazi and included the Benina airfield, and another military barracks. The Sixth Fleet would destroy these sites. Rogers delegated the commander of the Sixth Fleet, Vice Admiral Frank B. Kelso, to lead the operation.[17] Kelso was also designated Commander, Mediterranean Operations.

The air force and navy commanders approached the planning against the targets differently. The two services exchanged liaison officers with each other to coordinate plans and to inform each other of requirements for the operation. Kelso was not an active participant in the tactical planning. He allowed the navy's carrier air wings and staff of the USS *America* and USS *Coral Sea,* and their immediate command to conduct the detailed planning of the mission. Conversely, the air force had planning participation from Donnelly down to the 48th and 20th Tactical Fighter Wings in the United Kingdom, who would conduct the actual operation. No major problems were encountered because of these different planning styles and each approach had its own merits; considering the complexity and differences in targets, the planning was a major success.

The mission itself faced several problems. All of the targets were located in urban areas that, if not attacked with precision, could lead possibly to civilian casualties. Additionally, the Libyans had invested heavily in air-defense systems and had a band of Soviet-made SAM–2, SAM–3, SAM–5, SAM–6, and SAM–8 missiles along with French Crotale missiles to protect Tripoli and other targets.[18] The Libyans also had AAA and a sizeable number of fighter aircraft. USAF F–111Fs would have to rely on a limited number of Navy Grumman F–14 Tomcat fighters to conduct combat air-patrol missions to ensure air superiority over the Libyan airspace. Sixth Fleet ship movements were monitored by Soviet ships and would most likely tip off the Libyan forces to an attack, so the element of surprise might be gone. Likewise, the F–111Fs were denied either aerial overflight capability or the use of bases to launch direct combat operations by certain countries (notably France and Spain).

These concerns dictated some actions for the mission. Navy aircraft would have to avoid detection by the Soviets and also disable air defenses before its own naval aircraft hit their targets or the USAF aircraft bombed Tripoli. F–111F aircraft crews would be fatigued even before they made their bombing runs; they had to fly from their bases in Britain, through the Atlantic, into the Mediterranean Sea, hit their targets, and then return via the same route. Eight aerial refuelings would allow pilots to stay in the air for 14 hours while flying about 6,300 nautical miles.[19]

Commanders had other options, each of which had particular merits and weaknesses. USCINCEUR could have used teams of Marines or Special Forces to attack and destroy the targets from the ground. Unfortunately, there was no guarantee that friendly casualties could be avoided with this option. Similarly, the navy could have used a combination of naval surface-fire and Tomahawk cruise missiles. If the navy used surface fire, then its ships

Libya.

would need to come in close to shore and risked attack by missile boats, submarines, enemy surface-fire, and aircraft. Tomahawk cruise missiles had never been used in combat and were a limited, unproved resource. Air strikes provided a more flexible and better-known option. Some critics believe that the use of a joint strike with USAF and USN was unnecessary. The navy had aircraft stationed close enough to the target to avoid the long flights from Britain and could sustain operations in the event the situation warranted additional flights.

There are several reasons why USCINCEUR decided to select a combined USAF/USN force. First, the navy had insufficient numbers of A–6E Intruder all-weather attack aircraft to hit all of the targets with sufficient force and in parallel attacks. Unlike the "Line of Death" operations, the Sixth Fleet only had the USS *America* and the USS *Coral Sea* on station. The navy would have to use F/A–18A Hornet aircraft, not as capable as the A–6E for a nighttime precision attack. Those aircraft might cause more casualties, or cause more collateral damage, because of its limited night-bombing capability. Second, the

USAF provided a backup capability in case there was a problem with the Sixth Fleet and its aircraft.[20] Third, the U.S. government was trying to gain international support for the operation by involving the British government in the attack. Finally, the F–111F had greater capability to penetrate and survive enemy air defenses than A–6E aircraft did. The F–111Fs were assigned targets in the more-heavily defended Tripoli, the Libyan capital.

The chain of command was fairly simple. The president in Washington, through the Joint Chiefs of Staff, approved the targets and authorized the strike. Overall command for El Dorado Canyon was still placed under General Rogers, who delegated planning and preparation for the attack to CINCUSAFE and Commander, Sixth Fleet. Once the operation began and aircraft were in the Mediterranean area, Admiral Kelso was in command of all of the aircraft. Fortunately, the geographic separation between Donnelly, Kelso, and Rogers did not contribute to coordination problems. Equally important was the concern about undue command influence on planning. The CINCUSAFE's involvement in the tactical planning of the mission vice a more "hands-off" view of planning by the navy. Donnelly's approach provided for strong coordination of resources for the mission. Aerial refueling, reconnaissance, and other support activities for the mission were provided at the direct order of Donnelly. Micromanagement of tactical planning and the loss of control by wing commanders and numbered air force commanders could have resulted in confusion over responsibility for planning and executing the mission, but did not.

The navy's approach provided more flexibility to plan the mission, but top commanders might be left out of appropriate decision-making processes or could be unaware of critical requirements that might jeopardize the mission's success. Fortunately, there were no problems. Interestingly, Kelso served as a joint task-force commander for the mission, but there was no single designated air commander. Kelso was not only in command of the aircraft, once they were in the area of operations (the Mediterranean), but was also responsible for the naval fleet that would support the operation. Fortunately, the USAF and USN planning and operations teams provided excellent coordination of activities to support the mission.

Operations commenced on April 15, 1986. Preparation for the attack included extensive electronic intelligence to determine locations of hostile units and photoreconnaissance for target updates. USAF RC–135s based in Greece and USN EA–3B and EP–3E aircraft stationed in Spain performed electronic intelligence and reconnaissance-gathering missions. USAF high-altitude TR–1As from Cyprus and SR–71 planes deployed from Britain performed invaluable photoreconnaissance operations.[21] These aircraft provided the United States with additional insight into Libyan military capabilities and vulnerabilities to increase the probability of mission success. They also provided up-to-date targeting information.

USAF F–111F and EF–111A (electronic warfare aircraft) departed the United Kingdom in the late afternoon of April 15. Eighteen F–111F bombers (plus six spare aircraft) and three EF–111As (plus two additional aircraft) traveled south to the Bay of Biscay off the French coast. Once refueled, the spare F–111Fs and one EF–111A returned to England. The rest of the force continued on to Libya. Aerial refueling allowed the USAF to extend the range of the aircraft from Britain to Libya and back without landing. Over 34 KC–135 Stratotankers and 32 KC–10A Extenders were used for the mission. Unfortunately, some of the F–111F strike-force aircraft experienced equipment difficulties; out of the planned 18 USAF aircraft, only 13 were available for their primary duty. The F–111F

F–111F strike aircraft based in the United Kingdom prepare to take-off to bomb Libya.
Source: Department of Defense.

aircraft contained GBU–10 2,000-pound laser-guided bombs supported by the AN/AVQ–26 Pave Tack systems that allowed precision all-weather and night-attack targeting through the use of infrared and laser target systems. The USAF aircraft attacked the Tripoli airfield, destroying six IL–76 transports, a Boeing 737, and a G.222 attack aircraft. The barracks and headquarters were also struck. Unfortunately, one F–111F was lost—the only friendly casualty of the operation. Its two-person crew was never found.

The Sixth Fleet's naval air assets and other USAF assets were in position to support inbound USAF aircraft. F/A–18As, A–7Es, and EA–6Bs suppressed Libyan air defenses by using HARM missiles to destroy or jam SAM and early-detection radar sites. E–2C Hawkeye airborne warning-and-control system (AWACS) aircraft were launched from the carriers to direct friendly forces and detect enemy aircraft. EA–3Bs provided electronic-intelligence support for the mission. Similarly, F–14As were in the air to shoot down any Libyan aircraft that threatened the USAF or USN strike force. USAF assets included E–3A AWACS and EC–135E electronics intelligence aircraft.

Navy aircraft got set to launch their attack in eastern Libya over Benghazi once the USAF aircraft were close to their targets to conduct a simultaneous bombing run. A force of A–6E, F/A–18A, and A–7E aircraft destroyed four MIG–23 fighters, two Mi–8 helicopters, and two F–27 transports on the Benina airfield. A–6Es also struck the barracks in Benghazi, hoping to destroy any terrorists. The naval aircraft carried conventional unguided bombs, not laser-guided weapons.

A–6E, foreground, and F/A–18, background, prepare for operations against Libya during Operation El Durado Canyon. *Source:* Department of Defense.

Operation El Dorado Canyon was a success. A strong political message was sent to Qadhafi, and terrorist attacks against American interests suddenly ceased. The combined planning and operation of diverse assets was achieved under USCINCEUR. Unlike the Vietnam War, USAF and USN aircraft were used in a combined attack that outwardly did not portray service bias, but a unity of command. More important, a contingency operation was conducted in a timely and successful manner, perhaps a prelude for American air forces in the future.

Offensive

Although Clausewitz regarded the defensive as the stronger form of warfare, he conceded that an offensive was necessary to ensure a nation could be proactive in their attempts to win a war. The offensive was a key strategy to achieving certain national and military objectives. The offensive conjures up thoughts of attacking enemy positions or taking possession of geographic locations, but it can take the form of a surprise raid or campaign to a reaction, or counterattack, by a defending force.

Taking the offensive presupposes that a military commander wants to shape the environment or create a condition that will enable his or her nation to win or support winning a conflict. The offensive can be used to settle a dispute, send a political message, or wrest control of the tempo of war from an opponent. Military commanders taking the offensive must

consider a host of factors: assuming added risk of failure, increasing speed of operations, destructiveness of the attack, coordination, surprise, and so on to ensure a victorious offensive. The benefit of a surprise attack also must be weighed against the legality and morality of launching an action without the declaration of war. The Japanese failed to consider the impact on the American psyche of launching a surprise attack against the United States at Pearl Harbor in World War II. However, there are occasions when the use of an attack has crippled an opponent and forced a nation to capitulate quickly and unconditionally.

The ground campaign undertaken by the coalition powers in Operation Desert Storm forced Saddam Hussein's Iraqi military forces occupying Kuwait to retreat and, ultimately, surrender to a coalition of countries. The "100-Hour War" used a massive armor offensive to roll up Iraqi forces in Kuwait and enveloped enemy forces caught by surprise in the attack. A number of national military forces, with varying capabilities, conducted the land campaign in conjunction with air and maritime forces. This coalition force used overwhelming power to eject the Iraqi army in a swift and decisive manner from Kuwait, end its military threat to Saudi Arabia, and force its surrender.

This conflict is traceable to events in 1980 and earlier. Iraq and her neighbors had been involved in disputes over borders and territories for decades. In the summer of 1980, Iran and Iraq went to war as long-standing ethnic, border, economic, and other problems bubbled over into open warfare. Large-scale fighting saw the use of ballistic missiles, chemical attacks, and many other modern weapons in the war; in some instances in a campaign, and in others, with no discernable purpose. Observers also witnessed tactics not seen since World War I, such as trench warfare. Iran had just emerged from an Islamic revolution that toppled its monarchy. Iranian religious leaders blamed the U.S. government for many of the problems of the overthrown government and had cut its diplomatic relations with the United States. This action severed many lucrative business relationships that both financed and encouraged an active arms trade between the two countries. The Iranian military found itself without a source of weapons and support, and Iran was unprepared to defend its territory from Iraq.

Iraq, led by Saddam Hussein, was concerned about the incitement of the Shiite Islamic minority by Iran. Hussein's majority Sunni Islamic sect viewed this as a threat to their government. Additionally, a long-disputed border over the control of the Shatt al Arab waterway helped spark skirmishes along the Iranian-Iraqi border.

Both sides, locked in combat, sought to reduce each other's capability to purchase or acquire weapons by disrupting each other's oil shipments in the Persian Gulf. The United States took several actions. It protected neutral oil tankers with USN convoys and, fearing Iran, supported Hussein diplomatically. The Iranian revolutionary government had seized American embassy staff as hostages and was behind major efforts to spread anti-American rhetoric throughout the Islamic world.

By August 1988, both Iran and Iraq were exhausted militarily and economically. The war had drained both nations of financial resources. However, the Iranian and Iraqi governments demonstrated that they were willing to sustain a long-term conflict and accept tremendous casualties, but they ran out of money to buy food and weapons. Iraq's secular government was financed by a host of Persian Gulf nations concerned about the spread of Iranian religious fervor that could topple their own governments. Kuwait had loaned Iraq billions of dollars to purchase weapons and support their economy. By 1990, Iraq had difficulty repaying the loans

made by Kuwait and other countries, such as Saudi Arabia. Iraq also accused Kuwait of pumping Iraqi oil reserves on its common border, thereby reducing its ability to restore its economy to its prewar levels. The Iraqi government, financially drained, had never accepted Kuwait fully as a sovereign nation, viewing it as a breakaway province of greater Iraq. These conditions set the stage for the Persian Gulf War that involved a vast coalition of nations.

At 0200 on August 2, 1990, elements of Saddam Hussein's army invaded Kuwait with a force of tanks, helicopters, and Special Forces. Most of Kuwait's military was overwhelmed; some units retreated south to Saudi Arabia with the Kuwaiti government. Iraqi military forces had conquered Kuwait in a few, short hours, and Saudi Arabia was now at risk of a similar fate by Iraqi armor units. Kuwait was a major producer of oil; Saudi Arabia was an even larger one. The loss of those two countries and, potentially, other Gulf countries would affect the free world's access to oil and might further reignite the concluded Iran-Iraq war. The world reacted quickly.

The Kuwati Theater of Operations.

The United States rapidly deployed USAF units to defend Saudi Arabia and deter an Iraqi attack. The U.S. Army sent airborne forces to protect key positions in Saudi Arabia. Other nations also responded. The United Nations initially passed resolutions condemning the invasion and later authorized the use of force to eject the Iraqis from Kuwait and restore the legitimate government to power.

By 1989, the U.S. Army and the other services were beginning to reduce their force structure. The Cold War was nearing its end as the Soviet Union started to dissolve. USAF and army units and weapons stationed in Western Europe were deactivated and returned to the continental United States. The majority of the closest combat units to the theater were based in Germany. These units were trained and equipped in the forests of Germany to fight a war against a massive armored Soviet attack. The Persian Gulf had a completely opposite environment. It was a desert with terrain that included mountains and flat plains and had few urban areas or roads. U.S. forces, with their heavy equipment and logistical support, would need to move from locations in Germany to Saudi Arabia. Forces currently stationed in the United States were also deployed to the Gulf. Operation Desert Shield was born.

Operation Desert Shield allowed coalition nations to organize, train, equip, and deploy forces to Saudi Arabia. These forces would later prepare to conduct operations against military targets in Iraq and Kuwait. Army, Marine Corps, and other national ground forces eventually deployed to Saudi Arabia. The military forces were ready to commence offensive operations against Iraq.

Operation Desert Storm was launched on January 17, 1991, when the USAF and other coalition air forces bombarded targets throughout Iraq. USAF Boeing B–52 Stratofortress bombers, from Barksdale Air Force Base (AFB), Louisiana, carrying AGM–86C conventionally armed cruise missiles were sent to destroy targets in Iraq the day before. The scope of air operations would span these B–52 attacks, more conventional missions from nearby land bases in Turkey, Saudi Arabia, and aircraft carriers, and naval surface and submarine forces launching Tomahawk cruise missiles. The coalition forces conducted a strategic bombardment campaign that struck command and control, communications, air defense, leadership, military bases, weapons-of-mass-destruction production facilities, and other targets. This campaign sought to destroy the Iraqi national leadership, eliminate their strategic offensive and defensive capabilities, disrupt their economy, degrade Iraq's ability to export oil, and create conditions so that coalition forces had sufficient combat capability to deal with Iraq.[22] The air campaign focused on selected centers of gravity within Iraq. The campaign then focused on the destruction of enemy air-defenses in Kuwait and the establishment of air superiority over the area. Once air superiority was achieved, air forces would prepare the battlefield for land forces to conduct a ground campaign to liberate Kuwait and reduce Iraq's ability to conduct further ground campaigns.

The five-week air campaign prepared the battlefield for ground commanders by severely reducing Iraqi forces' mobility. Many Iraqi units were isolated and required extensive logistical supply. These forces were also devoid of any semblance of command and control after their communications were disrupted. Additionally, they were under a constant threat of attack by air. On February 24, 1991, the ground offensive began to push Iraqi military forces out of Kuwait and away from Saudi Arabia.

General Norman H. Schwarzkopf, the Joint Force Commander for Operation Desert Shield/Desert Storm, evaluated several operational concepts to conduct ground operations

against entrenched Iraqi forces. Although the air campaign destroyed several key targets, Iraq army units still occupied Kuwait. A ground offense would be necessary to force Iraq out of Kuwait. Schwarzkopf initially had considered a plan that included a direct frontal attack that would surround Iraqi forces in Kuwait City, the capital of Kuwait, and an offensive drive to the border of Iraq and Kuwait. The attack would bypass Iraqi strong points that included units from the Iraqi Republican Guards, elite forces controlled by Hussein that still could pose a threat to Schwarzkopf.

Another option was to widen the area under attack. Schwarzkopf could conduct a wider flanking movement that would envelop a large number of Iraqi forces and directly threaten rear military positions that included Iraqi supply lines and troop reinforcements. The main operational objective was the destruction of the Republican Guard.[23] Key communications and transportation centers would be captured by the offensive. Isolated units would be destroyed by air and artillery fire.

The ground offensive would be conducted in three fronts against 43 Iraqi army divisions. Directly facing the Kuwaiti-Saudi Arabian border were three commands: a joint force of Egyptian, Syrian, and Saudi Arabian units; a United States Marine Corps force of two divisions and a brigade; and a combined force of Saudi Arabian mechanized-infantry units. These forces would attack directly into Kuwait. The second front, west of the Kuwaiti invasion force, was assigned to the VII Corps, composed of American and British heavy armored divisions. This force's mission was finding, attacking, and destroying the elite armor-heavy Republican Guard units.[24] The last front was the XVIII Airborne Corps that would envelop Iraqi forces, block the Euphrates River valley from retreating Iraqi units, and then help the VII Corps to destroy the Republican Guard and other units.[25] The XVIII Airborne Corps was organized to use its speed to surround and cut off Iraqi forces quickly. Army aviation and light-maneuver forces would eventually support the XVII Corps in the largest helicopter-borne operation in the history of the Army. Schwartzkorf would use the XVIII and the VII Corps to link up with the forces driving north from the Kuwait border. This "Hail Mary Pass" offensive was designed to catch the Iraqis off-balance.

The ground offensive was predicated on speed and the destructive power of landpower forces. These forces would require great logistical support, the ability to move into position without arousing Iraqi positions, favorable weather conditions, significant command and control of forces, and the ability to break through a belt of complex defenses. There were many pre-offensive actions taken to ensure the coalition's ability to conduct a successful ground operation. For example, the threat of an amphibious invasion of Kuwait City was used to lead Iraqi defenders away from the VII and XVIII Corps, and other forces. Coalition combat engineers prepared to disable Iraqi defensive fortifications all along the Kuwaiti frontier. The Iraqis constructed two defensive belts that were 5 to 15 kilometers within the Kuwaiti borders that consisted of barbed wire, antitank ditches, sand berms, oil-filled trenches that could be ignited, and other strong points.[26] The second defensive line was up to 20 kilometers behind the first and consisted of defenses similar to the first line's, but included Iraqi forces ready to counterattack.

On February 24, 1991, at 0400, the XVIII Corps' Sixth French Light Division kicked off the start of the ground offensive. This unit and follow-on attacks across the border by the XVIII Corps found surprised, confused Iraqi units; the expected Republican Guard units had, unfortunately, been replaced by less capable conscript divisions. Most Iraqi units

AH-64A Apache attack helicopters of the 101st Airborne Division at a forward deployment field
supporting the ground offensive in Operation Desert Storm.
Three OH–58D Kiowa helicopters are behind the Apaches. *Source:* Department of Defense.

M–1 Abrams main battle tank using a smoke screen during Operation Desert Storm.
Source: Department of Defense.

suffered from severe morale problems and desertions after they endured an intensive aerial bombardment. Some units faced a 50 percent desertion rate due to continued bombardment, lack of logistical support, and dissension about the highly advertised coalition invasion of Kuwait.[27] American army units had better leadership, organization, morale, support, equipment, and training, and conditions for them were improving with each passing day. Artillery and air support were available. Iraqi forces crumbled in the face of this massive onslaught.

The 101st Airborne Division illustrates the rapid movement of forces in the XVIII Corps' envelopment action. As many as 300 helicopters moved troops and equipment up to 110 miles into Iraq.[28] Similarly, long convoys of vehicles containing coalition forces and support were fanning out in an ever widening movement of forces against the Iraqis.

The VII Corps was also finding much success. This force had over 1,587 tanks, 1,502 armored personnel carriers, 669 artillery pieces, and 223 attack helicopters.[29] Technological superiority allowed American armor units to defeat the numerous Iraqi armor units. The American M1A1 Abrams main battle-tank allowed many American crews to "see first, shoot first" in armor confrontations with Republican Guard and other units.[30] These tanks had a thermal-imaging system that allowed M1A1 crews to identify targets up to 2,600 meters away, day or night, and through smoke. The Iraqis did not have such a capability. Additionally, the M1A1s 120 mm smoothbore cannon had a longer range than did the Iraqi Soviet-made T–72 main battle tanks. American forces achieved great success with their superior capabilities. For example, on February 27, in a 45-minute tank battle by the Second Brigade, First Armored Division in Medina, up to 69 Iraqi tanks and 38 armored personnel carriers were destroyed.[31] This battle was the largest armored engagement during the Persian Gulf War.

Coalition forces facing the Kuwaiti border were also successful in meeting their initial objectives. Ground forces broke through all along the Kuwaiti front. The story was basically the same along the Saudi-Iraqi frontier; Iraqi units would initially provide only a token resistance and then surrender. Many units simply quit fighting or retreated toward Kuwait City in an effort to escape coalition forces.

The offensive was achieving all of its objectives. The coalition ground forces were rapidly pushing back the Iraqi forces out of Kuwait, compressing and surrounding them near the Iraqi port of Basra. The Iraqi forces were severely mauled and had lost an estimated 3,847 out of 4,280 tanks, half of its armored personnel vehicles, and almost all of its 3,100 artillery pieces to coalition forces.[32] Iraq had lost its southern Rumalia oil fields and its access to the Persian Gulf through the Shatt al Arab had been closed when American units had reached the Euphrates and Tigris rivers. Iraq could not export its oil via the Persian Gulf or import goods and materials for its economy. The Republican Guard and other army units were surrounded and cut off from any support. The western-most located units in the XVIII Corps were only 150 miles from Baghdad.

Saddam Hussein had lost his military and economic instruments of power, and his political strength had taken a significant beating. Coalition military forces were poised like a dagger at Baghdad and had only, at most, seven of its original forty-three combat divisions operational. Unfortunately, much of Hussein's elite Republican Guard units had escaped destruction. The Iraqi forces alone lost 86,000 prisoners to coalition forces (64,000 to U.S. forces alone) and in some estimates up to 15,000 to 100,000 Iraqis were killed in the war.[33] Defeat was almost complete. In almost 100 hours, the coalition ground forces

had gone on the offensive and returned the captured Kuwaiti territory to its legitimate government. Similarly, the immediate threat by Iraqi forces to Saudi Arabia and other Gulf countries was removed.

By February 28, 1991, President George H. W. Bush ordered a cease-fire. The end of the Persian Gulf War was attained. The offensive ground action, in combination of air and maritime forces, had provided the final nail in the coffin to end Saddam Hussein's efforts to capture Kuwait. Without the massive air-land offensive operations by ground forces, ejecting Iraqi military units from Kuwait and southern Iraq would have been difficult. The offensive paved the way to the eventual cease-fire that ended the Persian Gulf War and the immediate end of an Iraqi-led threat to the region.

Mass

The concentration of military forces can make the difference between success and failure. Military forces that do not have enough equipment or personnel wishing to attempt to conduct an offensive or a defense might make up for resource deficiencies by concentrating their assets to conduct an attack or ward off an enemy's advances more efficiently and effectively. The use of mass allows a nation to achieve a decisive victory. Likewise, the diffusion of forces can cripple an attack by failing to meet the minimum level of support necessary to win a battle.

Most military commanders conduct operations without all the desired combat assets and capabilities. Frequently, a commander must decide to concentrate or use mass to attack, or divide his or her forces to search for an enemy or defend a particular geographical area. In 1876, the U.S. Army faced a severe shortage of military resources that forced it to operate with units critically depleted of manpower and weapons. These forces were required to defend the Pacific and Atlantic coasts from potential invaders and commerce or coastal raiders and conduct a difficult series of campaigns against several Native American tribes in the West. The Plains Indian Wars were fought east of the Rocky Mountains and west of the Mississippi River. Infantry and cavalry companies patrolled western territories from small, undermanned outposts and fought a number of engagements with mobile Indian tribes.

In December 1875, the Bureau of Indian Affairs, responsible for administrating U.S. reservation and treaty agreements, was increasingly facing problems over the northern Plains. In 1868, a treaty between the U.S. government and various Indian tribes had established the Great Sioux Reservation that had set aside the area of the Black Hills in the Dakota Territory. Then white explorers discovered gold. A rush of settlers and prospective miners effectively broke the government treaty between the Sioux and Cheyenne nations and the U.S. government. Native American tribes had considered the Black Hills as hallowed, sacred lands, and now felt betrayed by the U.S. government for not enforcing the treaty. White settlers soon overran the Black Hills area. Sioux and Cheyenne tribes refused to move or settle in new Bureau of Indian Affairs reservations. The commissioner of Indian Affairs called in the army to force the tribes to return to the reservation by the end of January 1876. If they did not comply, the Bureau of Indian Affairs would consider them

hostile and subject to attack by the army. The army, however, still in winter quarters, could not reach them until the spring or summer. Additionally, the deep winter snows would make it nearly impossible for those tribes to return to the reservations.

The army faced a difficult spring campaign in 1876. It would feature a massed three-pronged attack into the Montana Territory to force these tribes back to the reservation. This strategy was proposed by Lieutenant General Philip H. Sheridan, commanding the Division of the Missouri. This campaign would lead to one of the worst defeats in American military history, at the Little Bighorn valley. Forces under Lieutenant Colonel George Armstrong Custer and his Seventh Cavalry Regiment would ride into defeat and infamy. A partial reason for Custer's demise would involve his failure to maintain his concentration of force, or mass.

George Custer led the Seventh Cavalry on the Little Bighorn campaign.
Source: National Archives.

Sheridan's plan involved about 2,500 infantry and cavalry soldiers that used three converging columns. One column, under Brigadier General George Crook, would attack from the south with 800 troops from the Wyoming Territory. Two columns from Brigadier General Alfred Terry's Department of Dakota would converge from the west and east. The western column under Colonel John Gibbon would drive east with 450 men from Montana. The last column, under Terry's direct command, would drive west from the Dakota Territory. Terry's Dakota column contained Custer's Seventh Cavalry and was his most mobile and famed unit. The three columns would drive into southeast Montana in an attempt to catch the "hostile" tribes between them. The Bureau of Indian Affairs estimated that there were only 500 to 800 warriors in the area.[34] Each column was thought to have sufficient forces to handle this threat independently. Unfortunately, accurate estimates of Sioux and Cheyenne strength were difficult to make: their nomadic nature made it hard to locate them or measure their size accurately. One calculation put the male population able to defend the tribes at about 2,000 men.[35] The army estimated the strength to be 2,500 to 3,000.[36] The challenge for the army was not its ability to defeat the Sioux and Cheyenne, but to locate them.

The Dakota column left Fort Abraham Lincoln on May 17, 1876. The column was composed of 12 companies of Custer's Seventh Cavalry Regiment, 5 companies of infantry, 3 Gatling guns, 39 scouts, and a support force.[37] Custer's Seventh Cavalry was composed of 31 officers, 566 enlisted men, 35 Crow scouts, and a dozen civilian scouts and other personnel.[38] The Custer force was organized into three battalions. One battalion under Major Marcus Reno contained 175 men, while a second was under the command of Captain Frederick Benteen with 120 troops. Custer commanded the last battalion of 221 men. The remaining military and civilian members were assigned to the regiment's headquarters staff, the Indian scout detachment, and a pack-train detachment. Custer, a brevet Major General of Volunteers in the Civil War, was an experienced cavalry officer. He had been one of the most effective cavalry officers fighting for the Union and had received the surrender flag from General Robert E. Lee's Army of Northern Virginia at Appomattox, Virginia, on April 9, 1865, effectively overseeing the end of the Civil War. At the age of 36, Custer and his command had never tasted major defeat, nor would it until the Little Bighorn campaign.

The U.S. Army of 1876 was a mere shadow of its strength at the height of the Civil War. Soldiers were likely to be armed with weapons and ammunition from parts manufactured in the Civil War and to eat rations from that same period. The typical cavalry trooper was a recent immigrant who was paid a paltry $13 per month. He was armed with a .45 caliber, single-shot Springfield carbine and a Colt revolver. Sabers were not usually taken on campaign. Never able to master the mobile guerrilla warfare used by Native American tribes, the cavalry relied on the conventional tactics of the Civil War: mass and firepower.

The three columns proceeded on their search for the Sioux and Cheyenne camps. Gibbon's column had detected evidence of the main Sioux and Cheyenne camps on May 16, but could not pinpoint their exact location. Terry believed that the camps were located between Gibbon and himself. Gibbon and Terry had linked up. He notified Custer to scout the area to find the camp. Terry believed that Custer might flush the Sioux and Cheyenne from the south and they would then be caught between the combined forces of Gibbon and himself. Terry ordered Custer, to advance south among the Rosebud Creek, then up

the Little Bighorn valley looking for the Sioux and Cheyenne encampment. Custer's troops left the column on June 22.

Earlier, on June 17, Crook had approached the Rosebud Creek in the southern Montana Territory. He believed that the main camp was near him, since his scouts had seen indications of a large Sioux camp, and that Crook might be able to surprise the tribes.[39] Instead, a force of several hundred warriors attacked him before Crook could start operations. Crook was taken by surprise, but managed to survive the ordeal. Ten men were killed, but more important, his advance was stopped and Crook retreated. Crook did not notify Terry or Gibbon of the battle. Almost out of ammunition and trying to care for his wounded, Crook turned south and returned to Wyoming. Now, the Sioux and Cheyenne were aware of new army units in the area.

The tribes did not conduct a second attack on Crook, but instead settled in the Little Bighorn valley in search of grazing land; they had heard of news of a large antelope herd, a source of food.[40] The camp extended about three miles on the Little Bighorn and created an attractive target to the army if sufficient forces could attack them.

Custer's Crow scouts had picked up signs of the main Sioux camp, and had identified old campsites and trails. Custer had two options. First, he could make contact with the camp, block any retreat, and force the Sioux into the clutches of the combined Terry-Gibbon column, as originally planned. Second, he could use his regiment to attack the camp. Terry had sent Custer ahead of the column on June 22. The orders given by Terry to Custer at his departure were confusing. Terry's written order stated that he "places too much confidence in your zeal, energy, and ability to wish to impose upon you precise orders which might hamper your action."[41] The Seventh Cavalry's commander seemed to have been given the ability to take almost any independent action, as long as he returned victorious. Terry's favored strategy, however, was to catch the Sioux and Cheyenne in a vise and use the combined forces to defeat the two tribes. Custer may have feared that if the tribes had detected his location, they then would scatter to all points of the compass and the campaign would become a failure. The Seventh Cavalry had never been beaten in the field, and now he was poised to lose the combined strength of Terry's and Gibbon's columns. Additionally, the exact size of the enemy's camp was still to be determined.

On June 25, Custer's scouts detected the Sioux and Cheyenne encampment in the Little Bighorn valley just west of the Rosebud Creek. Unfortunately, they saw two Sioux warriors, who they believed may have detected them. Additionally, some warriors had been seen breaking into a case of rations that had fallen off the army's pack train. Custer was convinced that his command had been discovered and took action to attack before the tribes could mobilize. Custer's usual tactic was to attack at dawn; it was already past noon when he organized his operation. After crossing the Little Bighorn River, Custer proposed a strategy to his commanders.

Custer's strategy was simple: Attack the enemy from the south with some of his forces and use part of his group to block the enemy's retreat and then annihilate anyone trying to flee. One way to force the tribes back to their reservations was to destroy existing camps, drive away their horses, and capture any noncombatants. The separate battalions could attack the campsite simultaneously and create confusion among the tribes. However, the Seventh Cavalry did not know the extent of activity or size of the main camp. Custer divided his forces into three battalions, a potentially critical error. Benteen even protested,

saying, "Hadn't we better keep the regiment together, General? If this is a big camp as they say, we'll need every man we have."[42] Custer was still convinced that he could defeat his enemy without specific information about the size and the exact location of the main camp. Instead, he sent Benteen's battalion over a series of low ridges to conduct a reconnaissance and attack against the camp. Benteen would approach on the left. Reno's center column was to head into the Little Bighorn valley. Custer would stay on the right, above the valley on some low hills. If the two other columns found and attacked the village, Custer would be free to descend on the village in a follow-on assault.

The battalions advanced into the Little Bighorn valley. After a long reconnaissance mission, Benteen found nothing on the left and decided to rejoin Custer and Reno, but he did not catch up with the Reno or Custer battalions. The pack train was struggling and was falling far behind the columns. Unfortunately, the pack train contained the regiment's entire ammunition supply. Reno was proceeding in a parallel course with Custer's battalion. The combined force saw approximately 40 warriors, who ran away on sighting the Seventh Cavalry. Custer ordered Reno to attack and promised that the entire regiment would support him if he needed additional forces.

Reno charged into the southern end of the main Indian camp. Keeping three companies abreast, Reno attacked straight into the heart of the Sioux campsite. Reno soon realized he had made a fatal mistake; the Sioux were not retreating, but rather gathering their strength to meet his charge. Instead of calling for a retreat, Reno ordered his cavalry troopers to dismount and they started to fight on foot. Reno effectively lost the initiative and was now on the defensive. Mounted warriors soon surrounded Reno's command; he then called for a retreat to the Little Bighorn River near a wooded area to create a better defensive position.
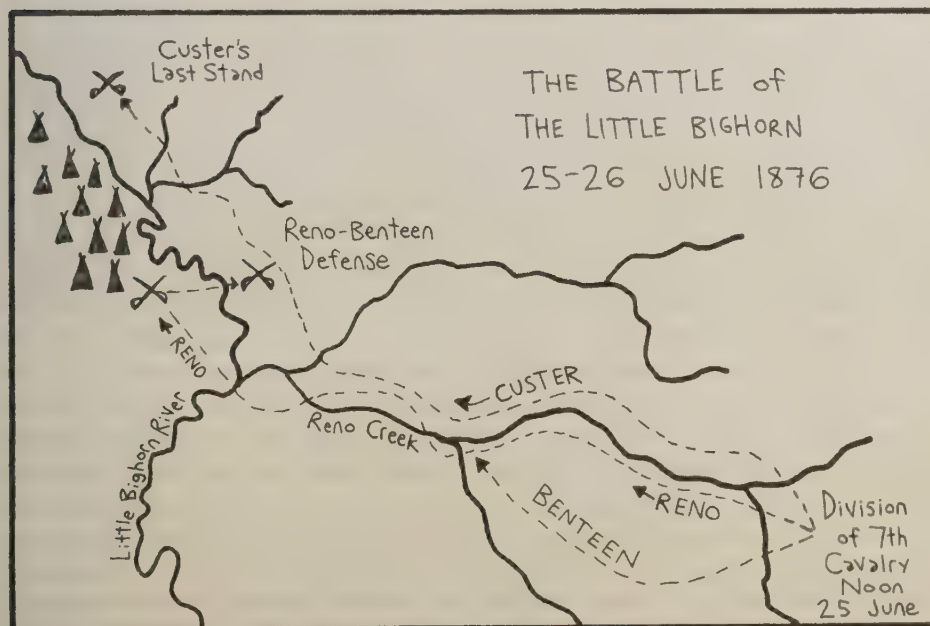
Route of the three Seventh Cavalry battalions.

Custer had seen the initial attack by Reno on the village. He was shielded from the view of the ensuing battle, however, and so continued his movement northward up the valley. He reached a point on the steep 100-foot ridges that allowed him to survey the entire valley. The Sioux camp was massive and was beginning to stir to meet the Reno attack. Warriors were rushing south to attack Reno's battalion while women and children fled north. Custer decided to continue moving north and called for Benteen's battalion to advance and bring up the pack train with supplies. Crow scouts had informed Custer that Reno was in a fight for his life.

Sioux warriors started to push Reno's men from the wooded area by the Little Bighorn River. Overwhelmed, Reno commanded his men to retreat up the banks of the Little Bighorn valley. Frantic, the cavalry troops tried to climb uphill while defending themselves. Out of Reno's 175 men, 40 were now dead. Fortunately for the survivors, Reno managed to rally his men to a hilltop, where they prepared a defense and awaited further attacks. Most of his command's horses were dead or missing, his men's ammunition was dwindling rapidly, and the wounded needed aid.

Benteen had received Custer's message to advance. When questioned, the messenger mistakenly told Benteen that the Sioux had "skedaddled" (retreated) in the face of Custer's and Reno's troops.[43] Although not true, the messenger may have assumed that Custer had led a charge and pushed the Sioux out and Reno was supporting the attack. The Seventh Cavalry would then make short work of an undisciplined enemy. Benteen ordered his command forward and met Reno's command. Reno begged, "For God's sake, Benteen, halt your command and help me. I've lost half my men."[44] Benteen estimated that 900 warriors were downhill from Reno awaiting a chance to attack.

Reno and Benteen's combined forces were sufficient to form a formidable defense. Benteen decided to dig in with Reno's force to defend the hilltop. Ammunition was shared between the troopers and more supplies were ordered up from the pack train that had again fallen well behind. When Benteen asked Reno about the location of Custer's troops, Reno speculated that their commander was a few miles up the valley. As the combined Reno-Benteen force finished with their defensive efforts, limited amounts of ammunition arrived from the pack train. Instead of searching for Custer, Reno decided to wait for the entire pack train to arrive and then proceed toward Custer.

The reconstruction of events leading up to Custer's final demise is speculative.[45] There are some Native American accounts of the last fight, but they are, at points, contradictory. No members of the Custer battalion survived, and accounts made by other members of the Seventh Cavalry are suspect. Custer was informed of Reno's retreat uphill. Whether he intended to draw away pressure on Reno or tried to conduct a reconnaissance on the campsite, Custer further split his command into two wings. One wing advanced downhill into the camp as he saw noncombatants fleeing by the thousands, but there were few warriors. This group then tried to link up with the other Custer force. The other wing continued on to the ridge, in sight of the Little Bighorn valley.

The Sioux forces, using cover and concealment by traveling up through deep ravines, attempted to block Custer's battalion in the front and rear. Warriors from the Reno attack reinforced the attacking force against Custer, who was now encircled. Skirmishing among warriors and cavalry troops began and soon intensified. The battalion started to form defensive positions. Several attempts were made by Custer to break out and dislodge the

Mistakes were made. The Little Bighorn battlefield was littered with the remains
of the Seventh Cavalry. *Source:* National Archives.

enemy positions. These efforts would all fail. Company after company was overrun as their
positions collapsed. Custer attempted to organize a final defensive position from the rem-
nants of his command.

Surging Sioux and Cheyenne forces overwhelmed the remaining Custer battalion.
The Seventh Cavalry troopers from Custer's battalion started to run out of ammunition.
They could not stop their attackers. The end came swiftly, as Custer and his remaining 42
soldiers were all killed. Defeat was final.

Custer's Last Stand might have been avoided if certain actions had been taken. Attacking without complete information was a tragic mistake. More important, Custer's splitting up of his force violated the principle of mass and did not help his position. The reduced number of troopers depleted his firepower, a tactical consideration that was drilled into the army's commanders in the Civil War and after. The lack of surprise also argued against the division of his force. The Sioux and Cheyenne tribes were aware of Custer's presence and were able to defeat first Reno and then Custer separately. The enemy forces were, in a sense, able to use mass and concentration of fire to surround and defeat the Seventh Cavalry Regiment. The strategy of simultaneous attack against the broad enemy campsite failed to deliver a knockout punch, and instead divided the limited number of troops that were able to support a concentrated effort against the Sioux and Cheyenne tribes in the 1876 Little Bighorn campaign.

Maneuver

Mass and concentration are important to a military force. If that military force can use its mass against an enemy's weakness, then its probability of success is magnified greatly. To achieve mass, however, one needs maneuver. A resource-strapped commander may need to move his or her forces rapidly into a position that will aid the success of an operation. Maneuver is an important principle of war that supports a commander's ability to strike at a place and time of his or her choosing. The commander can bypass enemy strong points or hit key targets to affect the outcome of the war.

Maneuver allows a commander the ability to shape the face and conditions of a battle. If a commander can position forces in a specific location and force an opponent to react to this movement, then the foe may lose the initiative to take action or, in the scramble to react, make a mistake; even better, the commander can take advantage of a numerically weaker opponent. One of the most important aspects of maneuver is to use movement in conjunction with firepower. A force that can move unhindered and strike with sufficient firepower at a vulnerable foe can wreak havoc against enemy capabilities. The ability to strike and to put one's force in an advantageous position is a lethal pairing.

In the Pacific campaign during World War II, Allied forces were pushed back to a defensive perimeter that stretched from Australia to Hawaii and up to the Aleutian Islands in Alaska. Japanese forces had advanced throughout Asia and the Pacific. The Japanese navy and army also developed a series of fortified island bases to protect their newly acquired territories. These strongholds included battle-hardened ground forces, veterans of Japan's war against China, that were ready to defend these positions to the death. If the United States and her allies attempted to take each island leading up to Japan, then a commander might face heavy casualties, much like World War I, except that trenches would be replaced by coral atolls or jungles that would ensure a bloody, long slugfest. One weakness was apparent: The supply lines that supported these bases stretched thousands of miles from Japan. Interisland supply was conducted by barge and required the Imperial Japanese Navy (IJN) to stretch its forces to defend its supply routes; in addition, the combined Allied

navies still possessed a formidable force despite a string of naval losses, such as Pearl Harbor, and had to be defended against.

General Douglas MacArthur, commanding Allied forces in the Southwest Pacific area, faced the dilemma of fighting a well-entrenched foe. At the start of World War II, grand strategists for the United States believed that the Allies should concentrate on the stronger of the Axis powers: Germany. A victorious Germany could knock out the United Kingdom and then turn on the Soviet Union. The United States alone would then have to face the combined Axis powers separated by the expanses of the Atlantic and Pacific Oceans. The Germany-first strategy espoused by the president and the Joint Chiefs of Staff ensured that MacArthur would not be the priority in the resupply of men and material. MacArthur reacted to this logistical constraint by developing a strategy of leapfrogging enemy strongholds using airpower and amphibious warfare capability.

The Allied forces were faced with an immediate threat to Australia: Japanese forces in New Guinea. If the Japanese had conquered New Guinea, the enemy would have been a short distance from Northern Australia. Loss of Australia could force a general Allied retreat back to Hawaii or even to the west coast of the United States. MacArthur's American and Australian ground forces in New Guinea had suffered major casualties fighting the Japanese and struggled to move in an almost-impenetrable series of jungles and mountains. These advances used up the precious limited resources assigned to the Southwest Pacific.

MacArthur decided to use a leapfrog, or a bypass, approach. Allied forces would seize forward bases that would then serve as an advance base to conduct attacks on the Japanese. This strategy would allow his forces to avoid frontal attacks, reduce casualties, go around enemy strong points, and cut those garrisons off from their supplies. The Japanese forces would face starvation and isolation. Additionally, MacArthur would not require as large of a force to conduct his bypass strategy as he would for a frontal attack.[46] If the Japanese were cornered on an island, they would put up a fierce defense. As the conquest of the Pacific got closer to the Japanese homelands, the Japanese defensive measures would become more intense, increasing Allied losses. Instead of defeating the Japanese, MacArthur would incapacitate them by starvation. His forces would maneuver into position to destroy convoys or directly attack support facilities.

Allied forces would seek the weakest-held position of the enemy first, capture it, and then establish a base of operations to exploit their newfound location to reduce supplies needed against much-larger Japanese garrisons. Colonel Matsuichi Juio, a senior Japanese Army intelligence officer responsible for analyzing MacArthur's intentions, complained bitterly about the effectiveness of the leapfrog strategy. Juio stated, after the war, that it was "the type of strategy we hated the most" because "Our strong points were gradually starved out."[47] Losses were indeed smaller than comparable battles in Europe. Between MacArthur's operations from Australia to his landing in the Philippines, he suffered 27,684 casualties while in the Battle of Anzio in Italy, 72,306 Allied troops were casualties, and the Normandy campaign saw 28,366 killed.[48]

MacArthur considered the bypass strategy a replay of a proven tactic. The use of maneuver allowed a numerically inferior force to envelop the enemy and fight a more effective campaign, with fewer losses, than a direct, frontal assault. MacArthur stated, "The system is as old as war. It is merely a new name, dictated by new conditions, given to the

ancient principle of envelopment."[49] MacArthur also admitted that this strategy was optimal for a force with fewer and faster-moving troops.

The strategy of leapfrogging was not even new in the Pacific theater. American forces had used it in May 1943 to free Alaska's Aleutian Islands from a Japanese presence. In June 1942, in a prelude to the naval Battle of Midway, the Japanese conducted a diversionary attack on the Aleutian Islands to draw the strategic focus of the United States to the defense of Alaska and Canada and away from the central Pacific and Hawaii. The Japanese had captured two islands: Kiska and Attu. Kiska contained the bulk of the Japanese ground forces. Instead of attacking the heavily defended Kiska forces, Attu was struck. If the Americans retook the island, the Japanese would lose their only airfield.[50] The Japanese lost almost their entire force of 2,500 defenders in bitter fighting on the island. After Attu's capture, the Japanese abandoned Kiska and American forces easily took it without a fight.[51] About 30,000 American and 5,000 Canadian soldiers were prepared to invade Kiska, but the 6,000 Japanese troops were secretly withdrawn back to Japan.[52]

The heart of MacArthur's leapfrog strategy was to use the combined services of all of his forces: air, land, and sea. New technologies, especially in airplanes and more capable aircraft carriers, would allow MacArthur's forces to strike at the enemy's weaknesses while cutting off their essential lines of communications until they were strategically useless and then they could be taken easily.[53]
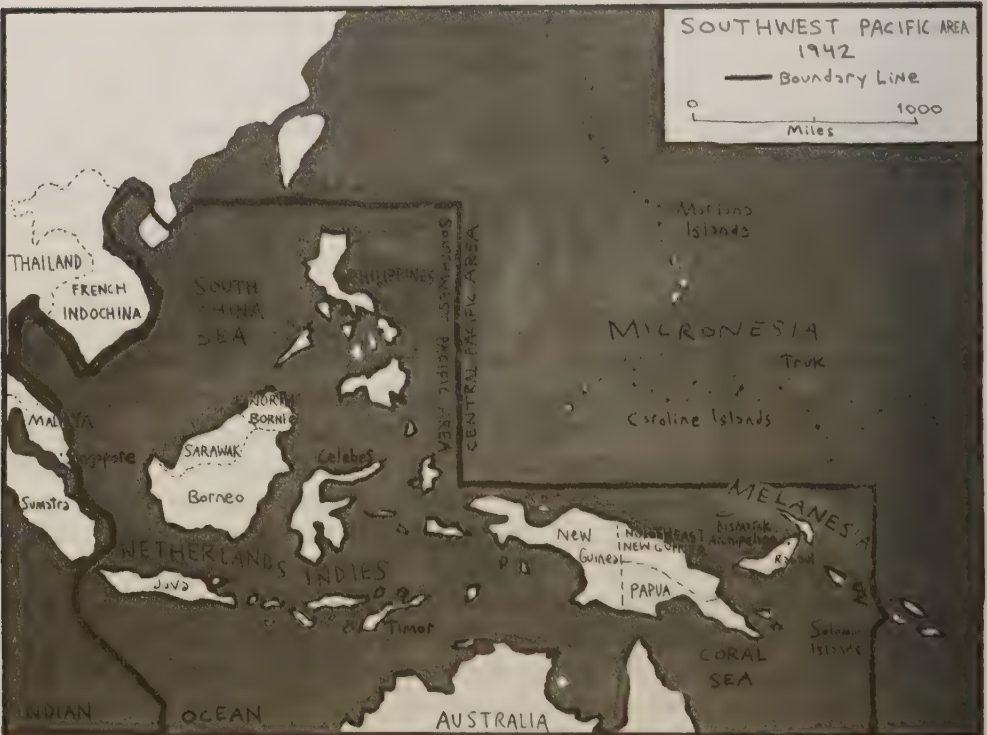
The Southwest Pacific Theater.

The new strategy was tested throughout the Southwest Pacific theater. The Allied forces were bypassing large groups of Japanese forces. One major Japanese force that was a potential problem was Rabaul. The Japanese fortress at Rabaul, located in New Britain, provided supplies and reinforcements to the rest of the scattered imperial forces in the area. Taking Rabaul would allow MacArthur to recapture the Philippines and the United States to move rapidly against the Japanese home islands.

Rabaul was a heavily defended base that could draw on approximately 98,000 men (76,300 army and 21,570 naval personnel).[54] The fortress was a stronghold, but by using MacArthur's strategy, it was not necessary for American and Australian forces to conduct a direct assault. Although MacArthur was ordered to take Rabaul, he intended to use his leapfrog strategy to surround and slowly reduce its defenses through aerial bombardment and by cutting its lines of communications from Japan. If Rabaul were isolated, MacArthur could continue northward to liberate the Philippines and on to invade Japan.

Rabaul was located on the northern tip of New Britain. New Britain was less than 75 miles from New Guinea and was surrounded by a series of islands. The base was situated strategically, with the Solomon Islands to the east and New Ireland to the north. MacArthur's plan of maneuver concentrated on taking islands around the periphery of

An island–hopping strategy sought to avoid costly amphibious invasion such as those on Tarawa in 1944. *Source:* National Archives.

Marines used Buffalo amphibious tracked vehicles to land on Pacific islands.
The Marines bypassed many Japanese strongholds. *Source:* National Archives.

New Britain. MacArthur ordered an advance between two axes. He would seize bases moving east and then north through the Solomon Islands. He would also move from along the east coast of New Guinea northward.

His main objective was to move Allied bombers within striking distance of Rabaul. He would strengthen existing installations, land on islands and build bases, and then occupy enemy strong points. He vowed to use as little force as possible in these maneuvers. His focus was on gaining air superiority and then attacking hostile aviation and naval forces. This would act to reduce forces not under direct attack by denying supply and reinforcement of those bases.[55] MacArthur would repeat this process until the objective was weakened to the point of collapse.

MacArthur began operations by targeting two islands off the coast of New Guinea: Kiriwina and Woodlark. These islands were not occupied, but they would allow Allied aircraft to attack Rabaul. He would also order forces to infiltrate along the Solomon Islands chain, starting on the island of New Georgia. This was all done without committing a large force. After these actions, MacArthur would move up the New Guinea coast. Once the New Guinea territory facing New Britain was under Allied control, MacArthur would continue his movement up the Solomon Islands. Remaining Japanese forces would be cut off from supplies shipped from Rabaul. The ever tightening noose around Rabaul could also be aided by added air strikes from occupied island runways.

MacArthur's campaign started in June 1943 and his strategy brought immediate results. Allied forces were able to reduce Rabaul's strength. Japanese forces throughout the Southwest

Pacific area were slowly weakened. Although they still fought with tenacity, they were in retreat. For example, 20,000 Japanese soldiers in New Guinea were forced to march 200 miles in jungle terrain to its nearest base to avoid being surrounded. Only 10,000 Japanese troops survived the march.[56] By January 1944, Rabaul was greatly weakened by air attacks. The Japanese attempted to reinforce Rabaul with additional naval aircraft from bases in the north. American carrier pilots were able to destroy more than 250 aircraft during a surprise attack in February 1944. No further attempts to reinforce Rabaul were made by Japan after the attack. IJN aircraft were, instead, ordered to leave Rabaul.

MacArthur had succeeded. By March 1, the Japanese were no longer a threat to Australia, and the road to the Philippines was opened. The 98,000 Japanese forces were left on Rabaul, while other outposts in the Solomon Islands and New Guinea were bypassed. The overextended Japanese were left on the vine to wither. Rabaul, no longer strategically important, was ignored until the end of the war. Japan lost over 2,900 aircraft, about 100,000 soldiers, and about 50 warships in the Southwest Pacific and gained little. MacArthur, using limited resources, avoided a possible Japanese invasion of Australia and set a pattern for the rest of the war of using leapfrog techniques and maneuver to defeat the enemy.

Economy of Force

Commanders make choices everyday. They must consider where to attack, defend, maneuver, camp, and make a host of other key decisions. Frequently, these decisions are shrouded in concerns about the lack of resources. In the Southwest Pacific area, MacArthur's leapfrog strategy was created because of his lack of forces. Similarly, put yourself in the shoes of a commander that faces a foe with unknown strength and intentions. The challenge facing military leadership is to use the appropriate level of forces to create the specific effect or outcome desired: Too many resources used may squander the forces and weaken other areas; too few forces may result in insufficient combat power to achieve an objective.

Leaders frequently make choices because of scarcity. Many situations demand too much manpower, materiel, and weapons for their limited supplies of resources. The commander must assess how much risk to assume when allocating forces for different missions. One might think of the concept of economy of force as assigning sufficient forces to achieve one's primary ends while keeping the minimal forces necessary for secondary operations.

Concentrating a military force's maximum firepower while keeping secondary objectives minimally manned has been a challenge throughout the history of warfare. One method to increase the maximum firepower is to deceive your opponent into thinking you will attack in one place while actually conducting operations with the bulk of your military forces in another. The challenge is to keep your opponent occupied by creating a condition in which they will deploy valuable defensive forces to your secondary objectives.

One such situation occurred in June 1942 at the Battle of Midway. The United States had suffered several defeats at the hands of Japanese forces. The USN had lost most of its battleship fleet to IJN torpedo and bomber aircraft at Pearl Harbor in Hawaii on December 7, 1941. The Pearl Harbor strike was a hollow victory for the Japanese; although many

ships were damaged and there was a tremendous loss of life, the USN still had aircraft carriers, key maintenance and logistics facilities and a potent military force in Hawaii. The navy had four aircraft carriers in the Pacific: USS *Hornet,* USS *Enterprise,* USS *Saratoga,* and USS *Yorktown.* Despite these ships, the IJN still had a three-to-one superiority in carriers. American forces had clashed with the IJN earlier at the Battle of Coral Sea, where the United States stopped a Japanese advance into New Guinea at the cost of a carrier, the USS *Lexington,* but the Japanese lost many aircraft, irreplaceable experienced crews, and its own carrier. The Japanese, however, were still riding high after a string of victories. One victory eluded them: to destroy the remnants of the USN's Pacific Fleet and extend their positions from the Aleutian Islands in Alaska to Midway and south to New Guinea.[57] Capture of Midway Island could also serve as a forward base of operations to launch an extended air attack and a possible invasion of Hawaii.

The Japanese plan had two phases. The first phase included a diversionary attack launched against the western Aleutian Islands in Alaska. Using a small force, the Japanese would use the attack to divert American resources from their main attack at Midway, protect the northern flank of the Midway strike force, and destroy any American military forces on those islands. The Aleutians could also have served as a bomber base to support attacks on Japan. The Aleutians would serve nicely as a way to force the Americans to react to this sideshow. They planned to abandon the islands after the hoped-for victory at Midway.[58]

The second phase was to attack the American naval air station at Midway. Midway Island is actually composed of two islands, Sand and Eastern, part of the Hawaiian Islands chain. The island is located more than 1,000 miles east of Pearl Harbor. Although the island was small, it contained a valuable airfield to refuel aircraft operating in the Pacific Ocean. If Midway were taken, the United States would be in a difficult position to advance

The Pacific Theater of Operations.

against the Japanese from Hawaii or stop their advance. IJN commander Admiral Isoroku Yamamoto, architect of the Pearl Harbor attack, believed the American fleet would not detect the advance of the Japanese fleet until it was too late to forestall the invasion of Midway.[59] When the USN did react, the Japanese fleet would be ready to defeat the remaining American carriers with its own carriers and battleships. The Japanese would use a main force of four large carriers supported by another fleet of two battleships and a small carrier against Midway. The main invasion fleet would contain three more battleships supported by a small carrier. The Japanese could have combined their eight carriers into a massive fleet, but Yamamoto had spread his fleet too thin throughout the Pacific.[60]

USN positions in the Pacific were a mystery to the Japanese. The Japanese did attempt to use aerial reconnaissance over Pearl Harbor and submarines to ascertain the location of the American fleet. Surprise was essential if Midway was to be taken. The IJN incorrectly thought some of the American aircraft carriers were near the Solomon Islands, well to the south of Midway. One carrier task force with the *Yorktown* had actually returned to Pearl Harbor from the Battle of the Coral Sea. The *Yorktown,* limping back to port, had been erroneously reported sunk by the Japanese.

The American Pacific Fleet commander, Admiral Chester Nimitz, had sustained a relatively high loss in ships, especially of valuable carriers. He had lost the *Lexington,* and the *Yorktown* was severely damaged at Coral Sea. The *Saratoga* was undergoing repair on the West Coast, but did manage to leave San Diego and try to reach the remaining carriers. She would be too late to participate in the battle. Most of the remaining battleships had been sent to the West Coast as well, to defend it from a possible invasion. In effect, Nimitz had only two carriers, *Enterprise* and *Hornet,* ready for action.

American naval intelligence had been tracking Japanese radio intercepts and was able to decipher some of the coded traffic. Intelligence analysts saw many messages that indicated some operation would be taken in or around Midway. American code-breakers were able to recover 90 percent of a very long, complex Midway operation plan transmitted by radio. By the last week of May 1942, Nimitz knew the true intentions of the Japanese.[61]

By June 3, Japanese forces had launched their diversionary attack on the Aleutians. Using two small carriers, two cruisers, and three destroyers, the Japanese attacked shipping, planes, and the shore installations at Dutch Harbor, one of the main naval bases in the Aleutians. After this attack, Japanese ground forces seized and occupied Kiska and Attu islands. Nimitz, knowing that the Aleutians were not the main focus of the attack, sent a minimum number of ships to counter the move: five cruisers and ten destroyers. The American fleet needed to concentrate in and around the Midway area. Although the *Yorktown* was severely damaged she was, with Herculean effort, repaired quickly at Pearl Harbor; the repairs, which were estimated to take a month, were completed without incident in a remarkable three days.

Nimitz would send his fleet north of Midway to await the Japanese Combined Fleet. Nimitz would have to strike early and hit the Japanese carriers first. He would use the combination of the three carriers and land-based aircraft from Midway. The Midway air forces included 16 obsolete Vindicator dive-bombers (called "wind indicators" by their crews), 21 outdated Buffalo fighters (locally known as "flying coffins"), 18 Dauntless dive-bombers, seven Avenger torpedo bombers, seven Wildcat fighters, and 19 army bombers.[62] The island also had a few reconnaissance aircraft that would help Nimitz locate the Japanese Combined

Fleet. The island was an initial base for Boeing B-17 and Navy PBY Catalina patrol aircraft that could help search for and attack the Japanese. The USMC also had a defensive battalion deployed to Midway before the war. Nimitz ordered the island reinforced immediately with antiaircraft artillery and additional Marine forces. Nimitz also recalled 19 submarines patrolling the Pacific to the area, with 16 submarines defending Midway alone.

Nimitz knew speed was essential for victory. The Japanese had more forces than he did; his own forces needed to strike first and decisively. Attacking the Japanese fleet from the flanks would achieve this objective. If the Japanese succeeded in sinking the American carriers and went on to capture Midway, Nimitz could not defend Hawaii. He ordered his commanders to attack the Japanese only if they could produce a disproportionate level of damage on the IJN fleet. He could not risk losing any more carriers unless he could destroy a significant number of Japanese carriers in return.

On June 3, a Midway-based PBY discovered part of the Japanese fleet. The PBY's crew estimated that there were 27 ships in the group, approximately 700 miles from Midway. This was not the main attack fleet, but the PBY crews reported otherwise.[63] In reality, these Japanese forces were the invasion fleet only, not the carrier task force. The United States now faced a challenge to gather sufficient forces to stop the Japanese. Because the PBY crew had misidentified the Japanese ships as the main attack fleet, Nimitz still did not know the carriers' true locations.

Nimitz ordered his relatively long-range aircraft to increase patrols from Midway Island and begin offensive operations. PBYs and B–17 bombers were sent out on patrol with orders to attack the Japanese fleet. B–17s were sent loaded with 500-pound bombs to attack the Japanese; they did not hit any targets. A PBY did manage to hit an enemy tanker, but scored no other hits against major IJN combatants. Although the United States had spotted the fleet and attacked it, the Japanese were still on the move, and their precise location and heading were unknown.

The American fleet was still searching for the Japanese carriers. Likewise, the Japanese knew they were spotted and they still had to locate the American carrier fleet. The invasion fleet for the IJN was still set to vanquish the garrison on Midway. The combined Japanese fleet was to start their attack from IJN carriers on June 4. The Japanese would use their four main carriers to assemble a strike force of Japanese Zero fighters and a combination of "horizontal" bombers and dive-bombers to neutralize the airfield and the enemy land-based units that could contest the planned invasion. The Japanese were increasingly sensitive to frequency of patrol aircraft missions from Midway that could update the locations of the different Japanese fleets.

The USN was also preparing to strike the Japanese. Nimitz was aware of the Japanese aircraft carriers but did not know their exact position. Nimitz's carrier task-force commanders sent out reconnaissance flights of aircraft armed, so they could first report the Japanese positions and then attack them. Meanwhile, the Japanese had attacked Midway, but they did not cripple American air operations. Army bombers and other naval strike aircraft were sent out to attack the invasion fleet. Fortunately, a Navy PBY sighted two enemy carriers. The Americans were now ready to go on the offensive and attack its main target. Without the support of their carriers, the Japanese invasion of Midway would fail and, more important, the future of their Pacific war would be in doubt.

The American carrier task-force commanders took a calculated risk. They would send

the maximum number of aircraft possible against the Japanese carriers. Since only two carriers were spotted, some of the aircraft from the *Enterprise, Hornet,* and the *Yorktown* would be held in reserve for fleet defense. The commanders reasoned that if they timed their attack correctly, the Japanese might be caught defenseless. They speculated that the IJN would not stop at one lone attack against Midway; instead, they would refuel and rearm their planes. If the American strike force attacked them at this time, they would be in the position most vulnerable to a mass attack. Additionally, there would be fewer combat air patrols protecting the carriers, as the original patrols that protected the fleet as the attack on Midway commenced would need to refuel. The American aircraft were sent back out to strike the Japanese carriers.

Planes from the *Hornet* and *Yorktown* were ordered out to the last known positions of the Japanese carriers. The American task-force commanders assumed that the enemy was heading south toward Midway, but the Japanese were heading northward toward the American carriers that shortened the distances needed for American naval aviators to reach their targets. A Japanese scout plane, however, had sighted American carriers to the east and so the Japanese were alerted. Aircraft crews flying the obsolete Devastator torpedo bombers were met by Zero fighters, despite the Japanese refueling and rearming of their own carrier-based planes. Fifteen torpedo bombers from the *Hornet* were all shot down by Zeros. The entire squadron was lost. Another squadron barely escaped: out of fourteen aircraft, only four survived. Devastators from the *Yorktown* tried to attack the carriers and they lost ten of their twelve aircraft. The American aircraft had taken off from their carriers early and were operating at the maximum range of their machines' endurance. Wildcat fighters from the *Hornet* could not defend their torpedo bombers because of range limitations. Additionally, the Japanese carriers and their support ships also shot down many of the aircraft with concentrated antiaircraft fire.

The Americans also sent 33 Dauntless dive-bombers from the *USS Enterprise* with Wildcat fighter-escort. The Devastator torpedo-bomber attacks had distracted the Japanese from the possibility of dive-bomber strikes. The Japanese were concerned most by these torpedo bombers and did not notice the dive-bombers that were now ready to pounce. Although the Japanese were ready to bomb Midway, they were ordered to change aircraft armament to focus on the American carriers. Japanese aircraft that could carry torpedoes instead of bombs were sent below the flight deck to rearm. This delayed their launch. After rearming, the Japanese aircraft were all on deck and ready to launch their attack, the most precarious position in which to be struck. The 33 Dauntless dive-bombers hit the vulnerable Japanese carriers.

Aircraft from the USS *Enterprise* and more aircraft from the *Yorktown* were able to attack three Japanese carriers. The *Kaga, Akagi,* and *Soryu,* all veterans of the Pearl Harbor operation, were left as burning hulks. Aircraft were left exploding on their decks as a deadly cocktail of aviation fuel and munitions burned out of control. The Japanese's naval strength was broken forever, its three carriers lost in a futile attempt to capture Midway.

The Japanese did manage to send a force of bombers from the *Hiryu,* their remaining carrier, to attack the Americans. Japanese naval aviators followed the American carrier planes back to their ships, where they struck the USS *Yorktown.* The aircraft carrier suffered hits from three bombs and two torpedoes from the strike force. Incredibly, the carrier was not sunk immediately thanks to its crew's heroic efforts to save the ship. The *Yorktown* was

US Navy Douglas SBD Dauntless dive-bombers
scored hits on the Imperial Japanese Navy's carriers at Midway. *Source:* National Archives.

forced to rely on a tow by a minesweeper, however, and a Japanese submarine fired a tor-pedo at the disabled carrier and sank her.

American carrier aircraft found the *Hiryu* later in the afternoon. She was not sunk, but her commander decided to scuttle her by fire from a Japanese destroyer. After suffering heavy damage from USS *Enterprise* aircraft, her surface escorts tried to surround the *Hiryu*, but they could provide little protection and the carrier sank.

The Japanese had lost four of their best carriers and their most experienced aircrews in a single day. The strategic advantage they had held sunk with their lost carriers. Japan would never recover enough to contest growing American naval strength. Her invasion of Midway was cancelled, and the Aleutian forces would be withdrawn eventually. The Japa-nese, in some sense, defeated themselves through carelessness, overconfidence, and poor disposition of their limited forces.[64] The IJN Combined Fleet was strung out among too many paths. Three separate fleets could not support one another. Conversely, the USN's two carrier task forces operated together to strike the Japanese. They also sought out their main target, the Japanese carrier fleet, while leaving a minimum of reserve against second-ary areas of interest. They concentrated their three available carriers against an unknown enemy that was threatening not only Midway, but by implication, Hawaii. The Japanese intended to use Midway as a way to shatter the remnants of the United States fleet; instead, the Japanese turned Midway into a major defeat for itself that would turn the tide of the war in the Pacific in favor of the United States.

Security

Any military operation must protect itself from actual or potential attack. Obviously, if a military commander wants to maximize the probability of defending a position or going on the offensive, then he or she may need to plan additional steps to protect itself. Shielding the location, capability, or intention of the military force from an opponent's eyes or ears is one way to maintain security for a particular plan or operation. A commander can order a force to use deception, camouflage, feints, or other moves to hide or give a false impression of its intent. Force protection is a critical asset for the military force. Protection is especially important if a force has few resources that it can use for an operation.

Security for a force transcends all levels of organization. Seemingly insignificant pieces of information may trigger the discovery of an enemy's intentions. For example, the sudden recall of personnel from a leave or pass status may indicate a mobilization of troops in progress. In addition, the unexpected purchase of an abnormal amount of sunscreen might point to a possible deployment to a desert theater. Open communication through increased radio transmissions of intent to move military units might tip off an opponent, too.

A key requirement to mount aircraft operations includes not only aircraft capability, but also their availability. A nation that does not have sufficient aerial assets to contest air superiority might try to attain it on the ground instead of the air. Aircraft require a tremendous amount of limited, specialized resources, such as maintenance, infrastructure, and a highly trained support force. If an enemy can destroy this support capability, then the nation might not be able to deploy its aircraft. Air bases would require sufficient security to protect these fragile machines and their systems on the ground from enemy attack.

Enemy forces can use several tools to disable an air base. Opponents can use Special Forces or guerrillas to infiltrate a base and destroy or disable vital capabilities. Additionally, an enemy can use a host of precision-guided munitions, mortars, or other long-range projectiles. The enemy can use these standoff weapons to strike an air base and their aircraft from many possible locations that can compound a defender's capabilities. Long-range ballistic missiles can also give new capabilities to a foe and increase a defender's vulnerability by affording an opponent the opportunity to strike at "safe" rear areas, where a military force might station valuable personnel, facilities, equipment, or weapons. Ballistic missiles are especially effective against aircraft based in locations that are forward-deployed away from their bases, especially if there are few missile defenses. These bases might not have adequate security to protect highly valued assets. This threat is underscored when military forces, the USAF among them, rely on a few critical, high-valued systems, such as an Airborne Warning and Control System or a J-STARS ground radar aircraft, that are based forward in theater.

Damaging, destroying, or rendering the base incapable of deploying its aircraft can significantly degrade the air force's capability to fight and win an air war or support surface operations. The mere fact that an insurgent or other force can destroy highly valued and apparently secure aircraft might send a political message to the country and the world. The air force faces the problem of deploying its assets in a theater that allows instant access,

but also increases the threat to their security because of enemy action. Conversely, the service can keep these assets outside of the theater and reduce their ability to respond to emerging threats.

Air and space forces can conduct several actions to protect and secure their assets. Security measures include confounding an adversary by using deception, camouflage, decoys; moving aircraft to other locations; and changing operational routines. They can also try to detect and defeat an enemy force before it can attack the air base. Finally, security forces can try to protect assets by using protective shelters.[65]

An opponent can try to accomplish several different objectives when it attacks air bases. A foe can try to capture an air base through a ground attack. An enemy force could also deny a defender the use of the base by damaging the installation. Similarly, a military force can simply harass a defender with random attacks to disrupt operations. Finally, the defender might face an attack that seeks to destroy aircraft or facilities.[66]

During the Vietnam War, the United States had overwhelming airpower capacity and strength to strike the North Vietnamese and Viet Cong in locations throughout North and South Vietnam, and elsewhere in Southeast Asia. The Viet Cong, however, were very successful at infiltrating urban and rural areas throughout South Vietnam. These forces were able to conduct guerrilla attacks on not only South Vietnamese military facilities, but also USAF assets on bases located throughout South Vietnam. Security personnel generally were able to defend bases from guerrilla attacks that penetrated a base's perimeter, but the Viet Cong attacked anyway. The air force protected main operating bases against 475 attacks from 1964 to 1973. Enemy attacks destroyed 99 U.S. and South Vietnamese aircraft and a further 1,170 planes were damaged. Guerrilla attacks throughout the Southeast Asian theater resulted in a loss of 375 aircraft, divided among the army, navy, Marine Corps, air force, and South Vietnamese forces.[67]

The Viet Cong conducted several operations to support their ground actions against American air bases. The Viet Cong needed information about the precise location of facilities, bomb dumps, communications, defensive systems, and aircraft. They also needed to know about patrols and security force deployments. The Viet Cong gathered this intelligence through informants and agents employed on base, ranging from low-level government employees to members of the South Vietnamese military. Similarly, Viet Cong guerrillas also conducted ground reconnaissance through direct observation. These reconnaissance missions specifically concentrated on the type and location of defensive measures, such as barbed wire and defensive bunkers.[68] The Viet Cong also conducted electronic warfare. The most common approach was to intercept base radio traffic and gather information about base defenses. The Viet Cong also attempted to jam radio communications by creating noise and whistles on transmission frequencies, effectively rendering communications useless, and sending false messages through the base's defensive communications systems to deceive the enemy. Finally, the Viet Cong would determine defensive positions, strengths, and the base's security reactions through reconnaissance by fire. Small patrols would attack locations around the base and note how American and South Vietnamese responded to the attack.

These operations allowed the Viet Cong to gather valuable information to identify targets and security weaknesses before planning or launching an attack. These actions would

The Viet Cong, an elusive foe, attacked U.S. Air Force installations throughout the conflict.
Source: Department of Defense.

maximize the possibility of a successful attack that would destroy the enemy's air capability, and had the added effect of reducing the morale of the airmen through harassment. The Viet Cong conducted three levels of attacks on the bases. First, guerrillas could use stand-off attacks through rockets and mortars to hit the base from a safe location. These types of attacks would reduce guerrilla losses by avoiding base defenses and could be launched quickly with little chance of detection or retaliation. This type of attack also increased the probability of success through the element of surprise. Second, the Viet Cong could also launch a sapper attack. This type of attack usually was made in conjunction with a stand-off attack and included raiders armed with explosives whose mission it was to destroy air-craft or facilities. Third, a battalion-level attack might be launched to seize the base. The attacks were conducted by Viet Cong forces using sheer weight of numbers to overwhelm enemy defenses.

The air force recorded very few base attacks from 1964 to 1967. Not surprisingly, the attacks greatly stepped up after the American escalation of forces deployed in South Viet-nam and an increase in American involvement in direct military operations. The initial onslaught of attacks occurred in 1968. Over 121 attacks were made, up from only 17 the previous year. Over 500 aircraft were either damaged or destroyed in 1968 alone. The dam-age and loss to aircraft were greatly reduced, however, as the air force and army developed countermeasures to respond quickly to guerrilla attacks with better trained and equipped forces. Unfortunately, the air force and army were not able to stop stand-off attacks from missile or mortar strikes.

Martin B–57 bombers stationed in South Vietnam
were targeted by Viet Cong guerrillas on the ground. *Source:* Department of Defense.

The North Vietnamese attempt to dominate South Vietnam rested on the destruction of the South's military capability to defend itself. The USAF heavily supported the South Vietnamese military efforts to defend their nation. If the North Vietnamese could weaken the American effort in any way, there was then a greatly increased chance of success against South Vietnam. If the North Vietnamese could not defeat the American air effort in the skies, perhaps it could do succeed on the ground. In 1921, Giulio Douhet, an early and influential airpower theorist, advocated that the most effective method to dominate the air was to do so on the ground.[69] The Viet Cong used this strategy to contest American airpower, but the majority of aircraft destroyed in their attempts were not high-valued aircraft, but mostly helicopters and light observation aircraft. Fewer than ten F-4 fighters were lost to ground attack and about 15 C–130 transport aircraft were destroyed. However, the attacks did create concern among air crews and support personnel about the security of their bases. If the Viet Cong could launch a missile or sapper raid against a secure American base, then what could they do in town or the jungle?

Aircraft vulnerability and security were major concerns of air force commanders, who had worried that U.S. aircraft were sensitive to increased guerrilla attacks as early as 1964. After the United States started to deploy more forces in South Vietnam in August 1964, air force commanders focused on their security concerns. Two squadrons of B–57 bombers were deployed at Bien Hoa Air Base, near the South Vietnamese capital of Saigon. These aircraft had few protective revetments or hangars to protect them.

The Viet Cong planned to attack Bien Hoa Air Base on November 1, 1964. The night before, the Viet Cong were able to place six 81 mm mortar rounds within 400 meters of the base. After midnight, the Viet Cong fired another 83 mortar shells into the base. The air force had lined up its aircraft wingtip to wingtip. The American forces lost five B–57 bomber aircraft; eight others received major damage, and seven had only slight damage. An entire squadron of B–57 bombers was disabled in an attack that took less than twenty minutes.[70] A valuable asset for the air force and its air capability was quickly left smoking on the ground. The attack did not even use troops to cut the barbed wire of the base's security fences, and was not met by any armed resistance. The remaining B–57s were sent to the Philippine Islands for protection against further guerrilla attack.

The commander of Military Assistance Command, Vietnam, immediately ordered changes to be made in base defenses. The original defensive forces outside of the base's perimeters were South Vietnamese Regional Forces. These Regional Forces were poorly trained, equipped, led, and were not ready to conduct night operations to patrol the surrounding area outside the bases effectively. These Regional Forces were not active force, but similar to a civilian militia. Instead, the air force was directed to create more aircraft revetments, increase patrolling, install better lighting, and replace the Regional Forces with regular South Vietnamese army forces.

By 1965 the American buildup of forces in South Vietnam was in full swing. The majority of USAF aircraft in Vietnam were concentrated at Da Nang Air Base, near the border of North Vietman. The rapid expansion of air capability started to outstrip the existing capability to support the aircraft. Planners from Headquarters, Pacific Air Forces (PACAF), were concerned not only about ground attack, but a possible air attack.[71] Although the chance of a North Vietnamese air attack was slim, PACAF officials prepared for a defense against any air attack. The army and Marine Corps deployed HAWK radar–guided

surface-to-air missiles to defend the base. Air Force Convair F–102 Delta Dagger intercep-tors were also deployed to Da Nang from locations in the continental United States, where they defended the nation against a Soviet bomber threat. These forces formed the active air-defenses for the base. PACAF planners estimated that even if the F–102 fighters and HAWK missiles defeated two-thirds of the attacking air forces, the remaining forces could still damage any aircraft that were not parked in revetments, and destroy fuel and munitions storage and support facilities. The North Vietnamese never attempted to attack the bases from the air.

Ground attacks on American and allied aircraft did not destroy the USAF air opera-tions significantly, although there were some damage to aircraft and harassment of military personnel that supported and operated the aircraft, but did cause disruptions to activities. Ground support continued with an expanded defensive capability that reduced the effec-tiveness of the guerrilla operations. However, the stand-off missile and mortar attacks were not stopped and proved to be a source of irritation to air force operations.

In the future, attacks on American air assets deployed in forward locations may be pos-sible using attacks from long-range tactical cruise or ballistic missiles armed with a range of munitions. These cruise and ballistic missiles may force American military commanders to deploy forces farther away from the battlefield, which would force a reduction in capability by decreasing the ability to react or conduct operations. Aircraft might need to fly farther from their bases to their targets, require additional tanker support, or have to remain on sta-tion in the air longer to react to rapidly evolving situations. Conversely, the destructive power of missiles may cause commanders to use dispersed fields that decrease a single base's vulnerability. This action can reduce the efficiency of a centralized capability to maintain aircraft and deploy them in mass.

Countries that produce tactical ballistic missiles do not need to use weapons of mass destruction. Because aircraft and runways are relatively fragile, the missiles' warheads could be simple high-explosive charges or cluster bomblets that can leave an airfield inoperable or aircraft damaged beyond normal flying conditions. The use of cruise or ballistic missiles may also provide a powerful weapon to knock out one of the major military capabilities that the United States can bring to bear. These threats can compound the existing defen-sive preparations by expanding the threats facing the American commanders. These prob-lems are further heightened by the use of advanced guidance systems that gives a foe better accuracy to conduct attacks. For example, the Viet Cong used several volleys of rockets or mortar attacks to strike a base. Tomorrow's opponents can launch an attack from a greater enough distance to avoid detection by defensive patrols. Additionally, the improved guid-ance and, potentially, more lethal warheads make an enemy capable of knocking out an airfield by using fewer weapons than previous attackers needed.

Future commanders that are faced with security concerns may have to alter operations or take other defensive actions. For example, instead of deploying the aircraft close to the area of operations, the air force may need to use long-range strike aircraft based in secure locations. Similarly, airpower planners and operators may have to conduct more aggressive actions to destroy these ballistic and cruise missile sites. Additionally, the deploy-ment of ballistic and cruise missile defenses may be required to thwart enemy actions. Unfortunately, these actions may reduce the ability to deploy these resources throughout the theater.

Conversely, military commanders will probably have to take more drastic actions to protect these assets. The passive defenses for the forces may include fixed hardened shelters. Assuming the air force can produce portable shelters or aircraft that can operate from austere conditions, the air force might have less deployed aircraft than was previously considered. The air force might also try to jam signals from the Global Positioning System satellites that provide advanced guidance information for hostile missiles.[72] These actions would affect an enemy's ability to launch a missile, but would also affect the commercial—and their own military's—operations in the area.

Maintaining security in military operations is extremely important. Without security, military forces might be attacked and the resultant losses might weaken our operations. Defending air bases provide a rewarding target for guerrillas or conventional forces that may weaken the nation's ability to conduct aerospace operations. In the future, the threat may become even more deadly because of accurate ballistic and cruise missiles that are armed with warheads carrying high explosives, chemical, and other weapons.

Surprise

Military commanders can greatly multiply their force's combat effectiveness by attacking in a location where an opponent has weak defenses. If the commander can avoid detection, then the attacking force might catch the enemy unawares of a movement or an approaching strike. Military leaders plan, train, assemble, deploy, and initiate the first stages of an attack in secret. A military force can use security measures and other techniques to fool an enemy. Airpower allows a commander to strike a foe quickly from many directions, across several targets simultaneously, and with lightning speed. These characteristics have allowed many surprise attacks in the history of warfare. Although many attacks may focus on the destruction of the enemy, some operation's aims are more subtle.

In the early stages of the Pacific theater in World War II, the United States and her allies were in retreat. The United States Pacific Fleet had suffered a devastating loss at Pearl Harbor and the American army was being encircled in the Philippines. The Japanese seemed to be on a rolling offensive that would soon swamp Australia and the rest of the Pacific. If the United States could stop the Japanese and reverse the uninterrupted chain of disasters, the morale of American and Allied fighting forces would improve and they might force the Japanese on the defensive. This action would allow the United States to gain some initiative, in the war theater and at home.

President Franklin D. Roosevelt advocated a plan to bomb the Japanese homeland in early 1942. Unfortunately, the American air forces did not have any bombers capable of hitting Japan, given its great distances from Allied-held air bases. The only possible way to launch an attack was through aircraft carrier-based planes. Those carrier aircraft had a very limited range, which meant the navy would have to get close to the Japanese home islands to launch the attack. Moving near the Japanese coastline would expose the task force to potential naval and air attack. The carrier planes would also have to fight through the heart of Japanese air-defenses. Since the navy had few carriers, the loss of one ship would leave a large void in American naval power in the Pacific.

Two naval officers proposed an option to attack the Japanese homeland. Their plan focused on using army medium bombers launched from aircraft carriers that could defend themselves from attack from enemy fighters, had sufficient range, and a relatively large bomb-load. General Henry "Hap" Arnold of the AAF had studied the feasibility of launching air attacks by bombers from aircraft carriers to support an invasion of North Africa. The plan to attack Japan was to use North American B–25B Mitchell medium bombers to bomb military and industrial targets in Tokyo and other cities. Because the bombers were too large to return onto a carrier, they would proceed westward and land in China. Arnold selected Lieutenant Colonel James H. Doolittle to command the raid. Doolittle selected 24 crews for a planned 20-aircraft attack force. The additional crews and aircraft were used as backup and to replace training attrition.

The B–25B had a range of about 2,400 miles with a payload of 2,000 pounds of bombs. If Doolittle intended to attack the heart of Japan, the damage from the operation would be light; its main effect would be a psychological one. The mission's strategic objective was to raise the American public's morale and change the Japanese psyche.[73] If the Americans could prove they could hit the Japanese homeland, then the Japanese military leadership might redeploy some of their combat units to the Japanese home islands to defend them from successive bombing missions. This action would reduce the forces American and Allied nations faced around the Pacific. Roosevelt also believed that the raid might avert a possible Japanese advance into India that would push the British out of the Pacific.[74] Unfortunately, the bombing attacks were still very risky to the bomber crews and carriers. Launching a bombing attack from a rolling deck of a carrier was not typical for army bomber crews. Additionally, the carrier carrying the planes was vulnerable to attack because its decks were loaded with bombers and therefore could not launch fighter aircraft to defend itself from an enemy attack. This condition forced the navy to use an additional carrier to defend the task force. Now, two carriers were at risk of attack and loss. The USN at this time had only four operational carriers in the Pacific theater.

Undaunted, Doolittle conducted an intense training program and preparation for the Tokyo raid at Eglin Field, Florida. By March 1, the training was begun, and soon completed, in secrecy. A navy pilot was used to instruct the bomber crews on how to take off from a short carrier deck. The B–25s used in the mission would require additional fuel, which would increase the weight of the aircraft and the difficulty of launching from the carrier's 700- to 750-foot runway. Doolittle ordered each B–25 to carry auxiliary fuel tanks and gasoline in 5-gallon cans that increased the internal fuel capacity to 1,141 gallons. Doolittle tried to reduce the weight of the aircraft by taking several steps. For example, he removed some rear-firing defensive machine guns from the planes. Also, AAF bomber crews were ordered to replace the highly sophisticated, classified Norden bombsight with a more simple substitute device. The Norden bombsight was used for precision-bombing missions. Since this raid was designed as a "show" attack, precision was not required. Additionally, Doolittle did not want the Norden bombsight falling into the hands of the Japanese.[75] Also, the crews practiced bombing from 1,500 feet, a relatively low altitude for the time, and they would not need high-altitude Norden bombsights.

By March 24, the training was completed, and Doolittle ordered the remaining crews and aircraft that completed training—22 aircraft and crews—to proceed to Alameda Naval Air Station on the San Francisco Bay in California. Doolittle had not told the crews of

their mission yet. He took extreme security precautions to avoid any information about the strike reaching the Japanese. Doolittle finally briefed the B–25 crews that their target was Japan after the USS *Hornet* passed through the Golden Gate and headed west.

Similarly, Lieutenant General Joseph Stillwell, commander of U.S. Army forces in the China, Burma, and India theater had to negotiate with Generalissimo Chiang Kai-shek, the head of the nationalist Chinese government, to commit forces and resources to recover up to twenty B–25 aircraft in China. Stillwell, as well as other senior American commanders, were not given the details of the raid. American negotiators could not disclose the full extent of the attack to the Chinese to ensure a complete surprise bombing operation. Another possible landing location was at Vladivostok in the Soviet Union, only 600 miles from Tokyo. However, Soviet officials did not want to risk hostilities with the Japanese by allowing American flyers to recover in their country after a strike on Japan.[76] They refused all help.

By April 1, sixteen B–25s, instead of the planned twenty, were loaded with their crews onto the *Hornet* with escort ships on the way to Japan. The task force would later add the USS *Enterprise* with additional support and escort ships. The *Hornet* needed to get the B–25s no less than 650 miles from their targets because of the aircrafts' range. Doolittle wanted the planes to take off about 450 miles from target, but could launch from 550 miles.[77] The planned attack date was scheduled for the early hours of April 20. Chinese forces would prepare airstrips to recover and refuel the aircraft for use within this theater.

As the task force got closer to Japan, the probability of Japanese detection of the ships increased. If a Japanese ship or airplane spotted the carriers, then the surprise attack would be lost. At 0738 on April 18, Doolittle's worst fears were confirmed when a Japanese patrol
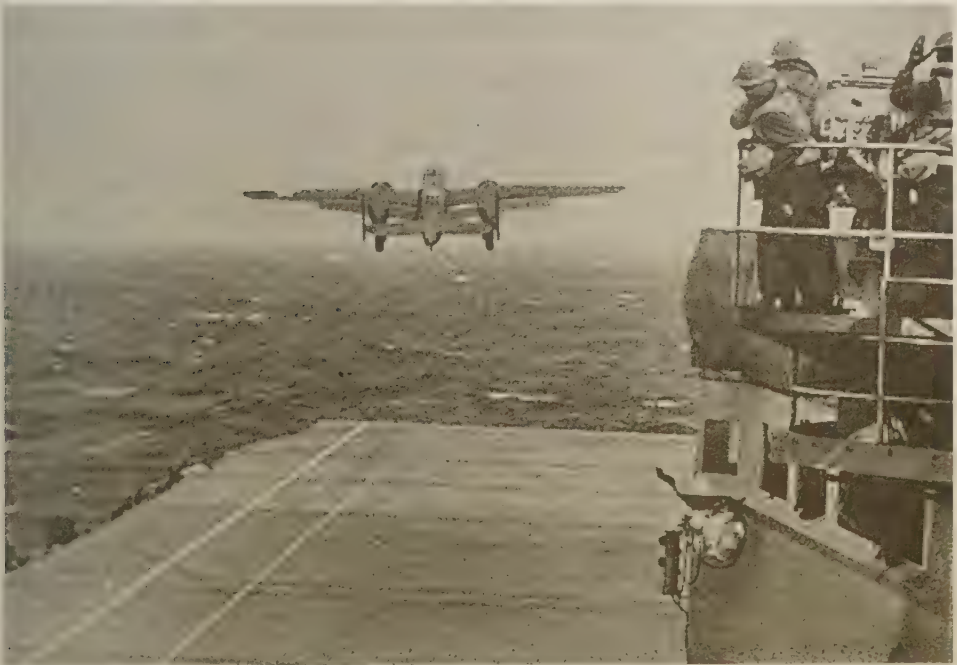
A B–25 takes off from USS *Hornet* to attack Japan during the Doolittle Raid.
Source: National Archives.

boat apparently spotted the task force. The naval task force commander ordered the Japanese craft sunk. Earlier, a search plane from the task force also reported that it believed it had been seen by another patrol boat. Doolittle then told the B–25 crews to launch their attack immediately. Instead of the maximum 650 miles from their targets, the B–25s would now have to stretch more than 800 miles to Japan. The aircraft had to stretch their range even farther. The bombers would have to attack during daylight instead of bombing at night and run the risk of Japanese fighters and antiaircraft artillery.

The planes were launched to free up the decks to launch naval carrier-aircraft to protect the fleet. The B–25s left the Hornet by 0818, ten hours ahead of schedule. The B–25s would most likely not reach their planned Chinese landing bases. They would have to fly as far west as possible to escape the Japanese. The Hornet and Enterprise immediately left Japanese waters after the last B–25 was launched and started to return to Pearl Harbor. Japanese carriers were dispatched to catch and destroy the American force, but they never found them.

The Doolittle force reached Tokyo Bay at 1215. The B–25s flew over Japanese warships and military installations. None of the aircraft were attacked until after Doolittle dropped incendiary bombs. Doolittle had cautioned the crews to attack military targets only, not civilian targets. Out of the 16 aircraft, 12 struck Tokyo. These planes bombed factories, oil storage facilities, electrical power plants, and military installations. Three other planes hit Nagoya, Yokohoma, the Yokokuska naval yard, and Kobe.[78] One plane failed to conduct its bombing mission. No planes were shot down. Fifteen of the sixteen aircraft arrived in China, but all either crashed or the crews bailed out of their airplanes. The last aircraft was forced to land in Vladivostok, where its crew and plane was interned by the Soviets until the end of the war.

The "Doolittle Raiders" left the Japanese dazed and confused about the attack. The Japanese patrol boats had reported the presence of the American carriers. However, no action was taken. The Japanese had correctly identified the attackers as army bombers, not the expected carrier strike. Initially, the Japanese believed the bombers had originated their attack from Midway. The Japanese feared further attacks from Midway and so the raid helped cement agreement in the IJN to try to capture this island by invasion, a fatal error for the Japanese.

The surprise attack was a strategic victory. The United States demonstrated its ability to hit the Japanese homeland. Morale soared throughout the United States, after the string of defeats it had suffered. More important, the Japanese army and navy admitted that they could no longer guarantee the security of the homeland and its emperor from an air attack.[79] A surprise raid that the Americans had staged far from its bases had breached the seemingly impenetrable Japanese defensive shield. The Japanese military had lost face and forced top officials to rethink their strategic plans.

The Japanese military made three major changes to their military deployments throughout the Pacific. First, the Japanese army formed an interceptor-aircraft force out of about 250 airplanes that they had withdrawn from bases around the Pacific. This force protected the nation from strategic bombing raids. These valuable aircraft and their crews were no longer available to attack American and Allied forces.

Second, the raid influenced Japanese army and navy planners to extend their empire's borders. The Japanese wanted to ensure that further raids from American or Allied army or

navy forces would be initiated from farther away and possibly detected before they reached the Japanese home islands. If the Japanese could seize Midway Island and advance to Hawaii, then the United States would have to launch any counteroffensive from its West Coast. Australia and other Allied-held areas in the Pacific would also be cut off from logistical support and later could be added to Japan's conquest.

Third, the Japanese launched an offensive in China in reaction to the raid. Stillwell lost 16 aircraft that could have supported his operations in the China, Burma, and India theater. Additionally, the Japanese took several airfields that would have been used to support the Doolittle raid. The Japanese also brutally retaliated against the Chinese for recovering the American crews after the raid.[80] The Japanese military allegedly killed over 250,000 Chinese civilians in retribution for the attack.

At first, Doolittle believed that the raid had failed its mission. His bomber force was scattered throughout China and the Soviet Union. Although most of the crew survived, he thought the raid accomplished little. Instead, Doolittle's surprise attack resulted in a significant effect on Japanese military thinking and changed the character of the war. Congress awarded Doolittle the Medal of Honor for his part in the raid. Indeed, the use of surprise was the key ingredient to this victory. Surprise was achieved despite the Japanese sighting of the carrier task force. The AAF tightly controlled the planning, preparation, and communications of the impending bomber strike. Information was not released to officials until absolutely necessary to discourage the inadvertent disclosure of the attack. The United States accomplished the unexpected, a land-based bomber attack launched from an aircraft carrier. Doolittle's Raid had resulted in the loss of all aircraft and some of the aircrews; this was a relatively small price to pay. The surprise and shock to the Japanese people and, more important, her military and political leadership accomplished America's goal of demonstrating its capability of hitting the Japanese despite their vaunted defenses. This strike was one of the first victories in the Pacific theater, and a significant morale boost for the United States.

Simplicity

During the American Civil War, the Union forces faced a daunting task of trying to subdue the Confederate States of America. The pre-Civil War Federal Army and Navy did not have sufficient resources initially to invade and conquer the South and unite all of the states. Strategies had to be developed to consider the lack of resources. Early in the war, a simple strategy was devised by Winfield Scott, the aged commanding general of the army, to defeat the Confederacy.

If strategic concepts and direction are too difficult or complex, a plan may fail because its own weight. Overly complex plans may require too much coordination and resources. These actions may require a clockwork precision that may not be possible given the dynamic nature of war or existing diplomatic conditions. The slightest miscalculation may trigger defeat. Additionally, translating simple concepts to lower levels of command allows subordinate commanders the flexibility to support the plan properly given their resources or field conditions.

The U.S. Navy used its fleet to blockade the South during the Civil War under the Anaconda Strategy. *Source:* Department of Defense.

The Confederacy owed most of its economic health to agricultural products that it traded, especially cotton. The South also required manufactured products from foreign sources now that its trade with the North was cut off. One advantage the North held over the South was its navy. The Union navy was able to enter and exit coastal waters throughout the South relatively unmolested early in the war. These attributes allowed Scott to formulate a strategy to defeat the Confederacy.

Scott's idea was to contain and weaken the South through laying siege to the region. The navy would blockade coastal areas and not allow any goods to enter or exit the South from any location. This economic approach to warfare was intended to cripple the South and prevent it from gaining diplomatic recognition by European countries. Similarly, the army would apply pressure along the border and contain the Confederacy until a larger

ground force was raised. The South would have to defend large areas of their country with few resources. The Union army could then concentrate its forces against thinly spread Confederate forces. Scott estimated that an initial force of at least 85,000 men needed to be trained; more ground forces would have to be raised. Eventually, the Union army would then split the South, first by occupying the Mississippi River basin and then conquering the rest of the Confederacy. The Union's superior railroad system to the west would allow it to outmaneuver the less-mobile Confederate forces. Union forces could then strike along several possible avenues of attack.

In effect, Scott's strategy was one of a siege first, and then selected attacks. The Northern press characterized the policy as the Anaconda plan. The North would attempt to squeeze the South into submission by economic strangulation.

This strategy was a deliberate, rather slow effort to force Confederate states to return to the Union. The strategy did not require a swift decisive battle, as officers trained in Jominian strategy were used to seeing. Critics of the Anaconda plan urged a swift massive attack against the South's capital in Richmond, Virginia. Instead of seeing the large-scale
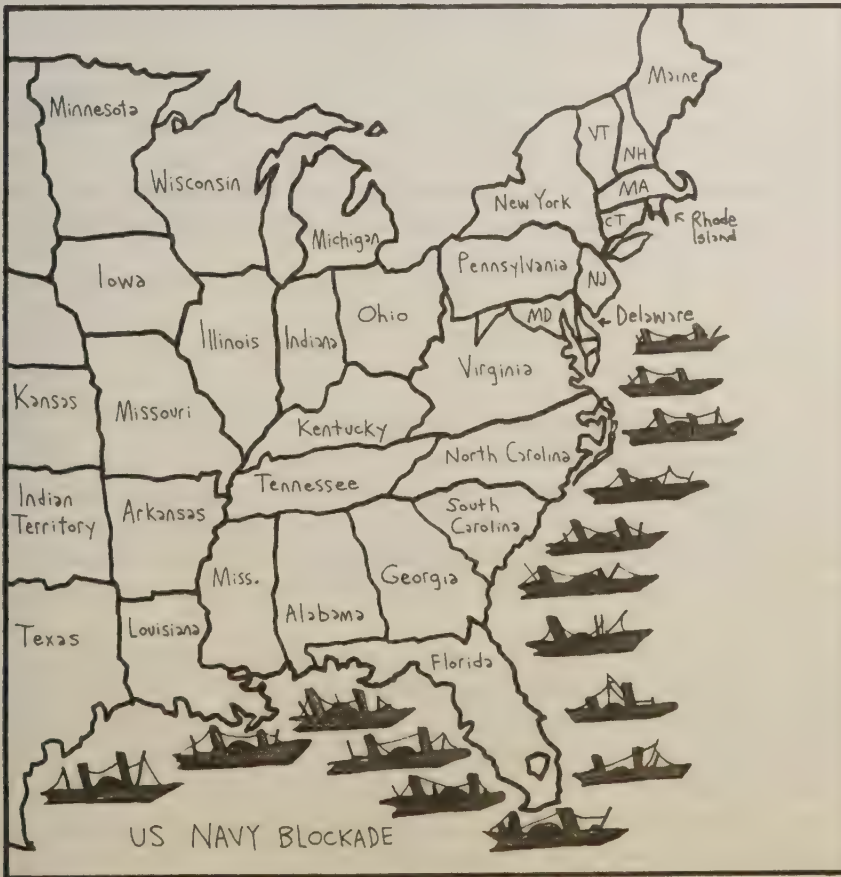
The Anaconda Plan's naval blockade affected all of the South.

geography of the war, some military leaders thought that a swift victory was possible to end the war. "On to Richmond!" was a cry heard around Washington. The Union still had to mobilize and train troops for this action.

The Union would have to defeat the South eventually. The South only had to subsist and maintain its borders to become an independent nation. Union sympathizers might lose patience if the war dragged on. The federal government had to demonstrate progress through military victories to secure political support, or else the Lincoln administration would lose in its elections. Lincoln eventually adopted portions of the Anaconda strategy, but endorsed a strategy to concentrate Union forces in the west to capture the Mississippi and the east to take Richmond. This action was taken partly to appease Congress' concerns that offensive action should occur before the end of three-month volunteer enlistments were over. For the Union, a swift victory did not occur. The Federal Army of the Potomac failed to capture Richmond until 1865. Four years of fighting would lead eventually from a strategy of maneuver, to fight a decisive victory (i.e., capture Richmond or Washington), to one of attrition and annihilation after Ulysses S. Grant took command of the Union army.

The Anaconda plan was an early attempt to create a strategy that considered the South's strengths and Union's weaknesses. The one portion of the plan that was adopted, the naval blockade, was generally successful. The South's economy was soon struggling to fight a war with few resources. Cotton and other agricultural goods literally rotted on piers awaiting transportation. The Union navy was able to move throughout the Atlantic and Gulf of Mexico to attack ports and support the army. The navy quickly translated the simplicity of the strategy of the naval blockade into action. It also allowed naval commanders to take actions, such as capturing New Orleans and raiding along the Carolina coast.

Summary

The principles of war provide concepts for the conduct of war. There are no "silver bullets" that will guarantee a victory. Certainly, the consideration of the principles of war should provide a basis to help plan or develop a concept for military planning. The historical examples used to illustrate the principles of war are merely that: illustrations. History provides a set of examples to show patterns and possible outcomes. Trying to reproduce a historical case study expecting the same result should not blind a student of military planning and strategy.

The battlefield of today and the future will most likely have different physical, political, military, economic, and informational considerations than in the past. One needs to consider, modify, and then apply theories and principles of war to these unique situations. Creativity, innovation, and the ability to take calculated risks are all necessary to achieve an appropriate military plan. The theories and principles of war provide the guidance, but the challenge to future military leadership is to apply them in the face of new threats, technological developments, and rapidly changing conditions.

Future conflict may take place over a spectrum of reasons. The United States may face "traditional" threats, such as a military invasion of an allied nation, or face a situation never

before seen. Leaders' consideration of the principles of war are important in finding a potential solution for a conflict, even if it is in areas not usually thought of as a traditional conflict. For example, suppose a country attempts to sabotage another country's financial systems through an information attack on its banking records. The nation that attacks those computer networks and databases can still apply many of the principles of war that we see in a conflict with military forces. Mass, surprise, security, and taking the offensive are only a few of the applicable principles. The concern from most leaders is the ability to recognize and react to these new threats and problems.

Although the principles of war have their roots in ancient warfare, they still are as applicable today as they were thousands of years ago. The technology and weapons of warfare have changed, but the common thread that holds military planning together is the military leader's mind. The principles of war provide the start of a solution for a commander, but the ability to become aware of a problem, evaluate the situation, think about alternatives, and provide a decision still rests on the shoulders of leadership. An individual's ability to think critically and creatively can never be substituted for the most intense and complete level of planning or doctrine. However, a leader's study of warfare and the principles of war can help shape the way a leader thinks about and solves a problem.

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5

FUTURE CHALLENGES
AND CONCERNS

The nature of war has evolved as technological, political, cultural, economic, military, and other facets of warfare and conflict have changed through the ages. The reliance on a particular type of military force, such as land power, has given way to a combination of military instruments and uses. The joint use of air, land, naval, and space forces has multiplied the possible opportunities and challenges to conduct military operations around the world. The lack of defense resources, emerging capability of weapon systems, coordination of actions between allied nations, complexity of political situations, and desired end-states have contributed to a host of challenges and concerns for the nation. Applying the theories, principles, and appropriate strategy development to meet these challenges will tax the minds of future national and military leadership.

These challenges are even more complex given the nature of today's unknown threats and the range of possible global problems that the nation faces. During the Cold War, the United States was aligned with many nations to fight the spread of communism through containment, deterrence, and then détente with the Soviet Union. Nations were tightly aligned either with the United States or the Soviet Union, or they were nonaligned, neutral countries. The known nature of threats and boundaries were common features during the Cold War, and consequently, planning for military operations was more certain than today. Although the United States fought diverse conflicts from Vietnam to Grenada to Lebanon, the primary concern was defending Western Europe from an attack by the Soviets through Germany and establishing a nuclear deterrent. The air force prepared to defend Western Europe with a significant European-based tactical air fleet. Similarly, it maintained and enhanced a nuclear-deterrent mission with early warning, intercontinental ballistic-missile, and nuclear-armed bombers to retaliate against the Soviet Union if it conducted a nuclear strike.

The United States and her allies won the Cold War. With the end of that era, many regional animosities that were squelched by the Soviet Union's existence or by its Warsaw Pact members have now progressed into open conflict that has spread across borders. Similarly, age-old religious, political, economic, and ethnic conflicts spread throughout hot

spots in the Middle East, Europe, Asia, and Africa. Transnational issues, such as terrorism or drug trafficking, also plague several areas around the world. Concerns about the governance of a nation brought revolutionary movements to several quarters around the globe. Competition also changed from a predominately political sphere to an economic one. Economic rivalries for market access or raw materials are not new, but the increased volume and sensitivity to national and international economies have expanded the drive to protect this access. The increased interconnection between nations' economies have led to the added concern and vulnerability of the United States to economic events around the world. Similarly, a backlash against Western culture and growing reaction against globalization has spread.

These challenges have forced national and military leaders to use many tools to achieve a country's objectives and ensure its interests are maintained. The United States continues to rely on political, economic, informational, and military instruments of power. The military instrument, at least, has transformed dramatically since the end of the Cold War. The threat of nuclear attack is not the primary source of military confrontation between nations. Instead, the United States military has deployed to a number of regions from Africa to Asia: on peacekeeping missions, an air campaign over the Balkans, and antiterrorist actions as just a few examples. These contingencies have forced military commanders to become more creative and to better use existing resources from air, land, sea, and space, along with a combination of diplomatic, economic, and informational tools that are not limited to national resources. This emphasis has not weakened the military instrument; it is still an extremely versatile option for policy makers. In America's War on Terrorism, all instruments of power have been used to fight terrorism. Military actions have been used in concert with diplomatic actions to garner world support. Economic aid was given to countries to increase security and purchase equipment. Likewise, the United States dispelled terrorist propaganda.

Unfortunately, the strengths that make the United States into a powerful nation also serve as its vulnerabilities. For example, the global economy depends on an intricate level of responsibilities and dependencies. The United States relies on trading alliances with foreign nations and the impression of a secure nation to attract foreign investment. The disruption of an energy or semiconductor supply can have tremendous economic, military, and political impacts. Security is required to protect this supply of products to ensure economic production is maintained without disruption.

Enemies can attack or interrupt this global chain in several ways. Guerrilla movements or terrorist attacks can strike at these vulnerable targets by using methods that the nation may have few defenses against. The use of asymmetric strategies and warfare might concentrate on a foe's strength pitted against our weaknesses. Like Sun Tzu, a foe might find a specific vulnerability that they can exploit and create a situation where they might attack another nation. These vulnerabilities can take almost any shape.

The United States recognizes the evolving nature of future conflicts. Weapons that were once the domain of nation-states are available for use by nonstate actors. Terrorist groups can threaten a nation with the release of a biological or chemical weapon. Some groups may even possess a nuclear device, or use conventional devices in unconventional ways. The speed of events and the desire to settle differences has increased with the rise of information technologies and news media's global access has heightened the awareness

of the world's problems. Additionally, the trend toward globalization of the world's economies has complicated the extent of national involvement in private commercial businesses. Finally, governments have been besieged by a host of natural and man-made disasters that have required a further military involvement in ways that were unthinkable or rarely used just a few years ago.

The Global Nature of Conflict

The United States has a range of interests that have a great influence throughout the world. These interests have led to specific actions and involvement that include alliances, business activities, nonproliferation of weapons, fighting terrorism, humanitarian aid, and a host of other objectives to satisfy them. The range of countries involved include former enemies, nations that are newly formed, steady allies, and nations that were once aligned and now want better relations. Similarly, countries that are not military rivals have become strong economic or political competitors.

The globalization of economic activities has led to integrated business and financial activities throughout the world. The United States is involved in the annual export and import of goods and services valued in the trillions of dollars to almost every nation in the world. Increased international trade provides jobs, political stability, economic and political cooperation, growth, and improved standards of living to many countries. If these activities are interrupted, there is the potential for great disruption that would result in tremendous losses in financial investment, employment, and living conditions. These changes can affect the stability of a country and may lead to conflict. Although the United States still imports oil and petroleum products from the Persian Gulf (approximately 27 percent), other countries are more dependent on this source. For example, Japan relies on this region for 74 percent of its petroleum imports. Although the United States is not as affected as is Japan, a lack of oil available worldwide has serious implications for America. Japan would not be able to produce goods and services, which would affect American business and consumers through reduced capability to manufacture items and to buy American products. Additionally, Japan's failure to conduct business in Asia might have a cascading effect on other nations' economic and political stability. Also, oil is a very marketable commodity that has a worldwide impact on its price whether it is sold in Saudi Arabia or Brunei. Oil not sold via the Persian Gulf can be sold by Venezuela, for a price. Americans would face a rise in oil prices that could affect its economy and lower her citizens' standard of living. Even if not initially affected, American must stay aware of events that occur around the world.

Similarly, events seemingly unconnected to national interests may have subtle political effects on that nation and then spread regionally. For example, deteriorating conditions between India and Pakistan could create a very unstable situation in which nuclear weapons might be used. Open warfare might include regional support from Islamic countries to Pakistan and engulf the region in a religious conflict that may close the Persian Gulf and threaten nations friendly to the United States. Closing the Persian Gulf to navigation would affect access to oil and the world's economy. If the conflict spreads north, the People's Republic of China might get involved. In both cases, the United States' position in the

region and her allies may falter, these actions would be felt all the way to America, either economically or through an attack on American forces.

The United States also has reduced much of its military structure since the end of the Cold War. For example, in 1989 the United States had 2.2 million personnel on active duty; today, there are about 1.4 million in uniform. U.S. military bases have closed throughout Europe, Asia, and in the Americas. National leadership, in compensation, increased the importance and reliance on alliances for mutual security needs. These alliance and treaty agreements may require an obligation to come to the help of an ally under threat from an external source. America's interest in helping maintain existing legitimate governments around the world or access to markets may, on the surface, not seem valuable to the country, but this indirect approach may enhance America's economic, military, or informational objectives.

If the nation faces rapid changes around the globe, it must respond to these events quickly and decisively; if left to fester it risks a larger problem. The policy of active involvement to shape the international system, advance the nation's interests, and promote our values has been used since the end of the Cold War. Much of this effort has been aimed at increased democratization, access to free markets, expanded and more diverse investment, and sustainable development. However, the United States must also become more proactive than in the past to stem possible military actions or terrorist acts. These actions might originate in locations where the nation has never had much influence or experience, but will nonetheless have to be prepared to act. The global connection of economic and political events among nations is becoming more intertwined and complicated.

Many nations that were formerly under authoritarian regimes have been challenged by the conversion to democratic governments and free markets, and now face problems that include religious and ethnic conflict. These countries are especially vulnerable to external and internal strife that threatens the existence of those nations or states. One of the key objectives of former president William Clinton's administration's National Security Strategy was to promote democracy and human rights.[1] The United States tried to accomplish this goal through active engagement in international events. Proponents of democratization of nations believe that political reform is the best measure to avert conditions that could foster ethnic and regional conflict.[2] If American diplomatic, economic, and informational instruments of power are used to resolve a problem, then military action might be averted, and a fast solution and more sustained peace may be obtained at a lower cost.

The nation must be able to respond globally to a range of crises. Issues that would not have been of much concern in the past are now vital interests of the nation. These issues have spawned new challenges for the military, including responding to cross-border conflicts that can spread among nations and create new threats. Also, the spread of technology, information, unstable borders, and the diffusion of weapons of mass destruction (WMD) have created an environment where many new threats to the nation have flourished. The United States faces information attacks, the increased requirement for homeland security from terrorists, new ballistic-missile threats, conventionally armed insurgencies, and other threats. Additionally, the nation continues to face problems of narco-trafficking of illegal drugs. These new threats will require creative and innovative military planning and strategy to avert many of these problems. Good military planning is needed, especially when military forces must conduct operations to include humanitarian aid, peacekeeping, deterrence, combat, and potential nuclear actions.

Many of these new challenges involve nation-states, but fighting terrorism or ethnic conflicts involves nonstate actors. What happens when a nonstate actor fights nation-states? Is it war or an internal problem? What is the relationship between the military and civilian law-enforcement agencies if there is a terrorist attack in the United States? Homeland security is becoming an important consideration to fight terrorists. Can military leaders direct civilian agencies to act?

Meeting the Global Threat

The United States faces several serious challenges in the future. Although the nation still maintains the most powerful and capable military force in the world for the foreseeable future, there are some troubling trends. These threats will influence how the nation organizes, trains, equips, plans, deploys, and operates its armed forces. However, the nation cannot meet all global threats alone; her allies and friends must also take action to solve regional concerns, too. International organizations, such as the United Nations and NATO, also help settle many of the world's problems through monitoring and peacekeeping efforts. Non-governmental organizations, such as the Red Cross, can also provide help through private efforts, but they may not provide sufficient aid alone. The extent of global threats is large and varied and will require American involvement. These threats are aimed not only at American national interests at home, but also abroad. The indirect threat to American interests is difficult to address and, at times, justify to an increasingly skeptical public. A future military leader must contend with these issues and concerns.

The most direct military threat to the United States' national security and existence continues to be WMD. Several nations have the capability to produce these weapons and their delivery systems. Although several nations long have had nuclear weapons and their delivery systems, a dangerous trend emerged in the mid-1990s. Several countries that were not major developed countries started work on nuclear- and ballistic-missile programs. These nations embarked on costly programs that would provide an instant boost to their prestige, influence, and military power. Countries such as North Korea, Iran, and Iraq have made attempts to develop WMD and ballistic missiles. Iran and Iraq have also shown the will to use chemical warheads on ballistic missiles during the Iran-Iraq War in the 1980s. These countries may substitute nuclear weapons for their lack of conventional weapons capability in the future. Although the Soviet Union and United States had thousands of nuclear weapons pointed at each other, both countries understood the concept of mutual deterrence. Other nations might not, or might be unwilling to do so, and decide to operate their few nuclear devices or other WMD along with any conventional weapons. The spread of these devices among potential foes has complicated the options for American national leadership by raising the specter of the release of nuclear weapons on a battlefield or, potentially, a strike on the continental United States.

Another danger is the spread of WMD-production capability by nonstate actors and terrorists. Chemical and biological weapons have less destructive power than nuclear devices, but they can still inflict horrendous casualties from a relatively small release of particular substances. These weapons are perfect for a terrorist group. They are relatively

inexpensive to manufacture and hard to detect. An individual that has access to certain com-
mercially available chemical and biological processes could create a WMD. For example, in
1995 the Aum Shinrikyo cult launched a sarin nerve-gas attack on a Tokyo subway, leading
to several deaths and injuries. This group also tried to use biological weapons, but fortu-
nately the group's members were technically and operationally inept.[3] These weapons were
easily smuggled into the Japanese subway system. Similarly, the 1993 bombing of the
World Trade Center in New York City that killed six people was originally intended to
collapse one tower onto another, with potential casualties rising to 250,000.[4] Unfortu-
nately, on September 11, 2001, several terrorist attacks against the World Trade Center and
the Pentagon succeeded with deadly effect. The Al Qaeda terrorist organization, using
combined attacks by hijacked aircraft, killed about 3,000 people directly and plunged the
United States into a state of panic. A terrorist organization might find these types of
weapons an ideal counterweight to American military power. The United States's emphasis
on a forward defense may need to refocus on border and homeland security and increased
efforts to detect and prevent the use of such weapons by military and civil authorities
within the country.

The United States also faces the possibility of attacks on its critical infrastructure,
which includes its information systems. The world has come to use a number of systems
that use electronic and computer interfaces. The advances and spread of information tech-
nologies have been a great boon to the world, but at the same time they have created
tremendous vulnerability. Diverse systems, such as electrical power grids, telephone, air-
traffic control, financial records, and other modern conveniences that allow the nation to
function, are frequently operated through computers and information networks. The avail-
ability of computers and access to networks has allowed individuals, organizations, and,
potentially, nation-states to disable or destroy the operation of particular functions through
a cyberattack. The vulnerability of systems have been demonstrated in numerous cases
where a computer virus was introduced into a network and delayed or disabled a system,
albeit for a few hours or days. Additionally, because of the United States military's reliance
on a number of computer systems that operate communications, logistics, combat, and
other systems, they are also vulnerable to attack. Terrorists or other foes can create prob-
lems for the nation's military through a single intentional or inadvertent act.

The increased threats around the world are not the only reasons to deploy the military.
Man-made and natural disasters pose a significant threat to human lives around the world.
Ethnic conflicts have contributed to open fighting between divergent groups that have
spread throughout certain regions. For example, the dissolution of Yugoslavia created
many movements among ethnic groups for sovereignty over particular geographic areas.
Serbian, Croatian, Albanian, and other groups have battled for years. The United States,
along with other nations, have been involved in peacekeeping and peace-enforcement
operations. Additionally, many nations have been active in rebuilding destroyed or damaged
infrastructure to support basic human needs that include the physical plant, roads, and
governmental services. Conversely, the United States has provided and distributed human-
itarian aid through the use of military forces to starving or displaced persons because of
conflict or natural disaster. Finally, the country's military has also conducted evacuation of
noncombatant personnel from dangerous situations. For example, if a country has an
internal conflict not involving the United States, American citizens may be put in harm's

way. State Department employees, business executives, students, tourists, and other citizens who might become casualties or hostages may need rapid evacuation or military actions to free them.

All of these situations in which open conflict is present and American military forces have been deployed hold the possibility of a rapid escalation of involvement and casualties. Suppose the United States starts an emergency evacuation of her citizens from a combat zone and the security of the military and civilian personnel comes into jeopardy. A party in the conflict might decide to take American citizens as hostages to send a political message or for ransom. U.S. military forces protecting these citizens may have to use force to get them out. This action unwittingly may draw the United States into the conflict by appearing to support the opposition of one party or another. The "wronged" side might take further action to strike American forces in retaliation while the United States deploys additional forces for security. The potential for a widened conflict may spin out of control.

Today and into the foreseeable future, the nation's military must work as a joint air, land, sea, and space team with other countries and, increasingly, international governmental and nongovernmental organizations. The United States has been very successful at integrating the operations of its many services into an effective force. The Department of Defense must continue to work with other governmental organizations to increase the effectiveness of other instruments of power. Diplomatic, economic, informational, and military efforts that are better coordinated can increase the likelihood of reaching a desired end-state. Conversely, the nation continues to stress the use of alliances and informal coalitions to meet mutually beneficial interests. A more complex working relationship involves military coordination among the combination of international governmental and nongovernmental organizations. Relief, humanitarian, and other groups do not represent nation-states officially, but do provide significant capability to solve many complex situations. These civilian-run organizations can give much unique, directed aid to a region.

The range of capabilities to conduct possible military actions, from rescues to humanitarian relief, has always been available to national leaders, but the frequency, intensity, complexity, and uncertain nature of these conflicts have increased markedly since the end of the Cold War. The U.S. military must stay in a heightened state of readiness, and it must be capable of a rapid, appropriate response to a dynamic and possibly volatile situation. Unfortunately, the nation has reduced many support bases, force structure, and other defense resources. Conversely, military forces must operate in geographical and cultural conditions with which they are frequently unfamiliar. These circumstances have forced military leaders to become more innovative and reliant on creative approaches to solve these problems.

Indeed, the future provides an array of situations that will force national and military leaders to apply their knowledge of military, political, economic, and informational issues skillfully enough to forge innovative solutions to complex problems. In the past, military operations were viewed only for their effects on the battlefield. Today, military leaders have to be cognizant of a wide range of situations that can influence the use of force and what form the objective of the action should take. For example, the fear of casualties or the permanent destruction of key infrastructure may be contrary to the nation's ultimate interests in the region. Destroying roadways, utilities, and other infrastructure can halt an enemy's economy, but it could create undue human suffering during and after the conflict. These

conditions may create a setting where a massive rebuilding program, assuming resources are available, that may cause significant problems for the United States and her allies in the future.

Emerging Threats

In the American Revolutionary War, the British forces were well trained to fight a continental battle, along the lines of a well-defined set of rules. Unfortunately for the British, their commanders had difficulty fighting both set-piece battles against American colonists and a growing guerrilla and insurgency movement. New threats, and Britain's apparent failure to adapt to new developments, helped the colonists to eventually earn their independence. Today we also face new threats that many military leaders find confounding in terms of the difficulty in defending or taking action against certain actions.

One of the most difficult problems for today and in the future is the rise in power of nonstate actors. Nonstate actors (e.g., terrorist or counterrevolutionary movements) have gained much ground in terms of sophisticated weapons, influence, and their ability to persist in the face of increased scrutiny and opposition. These groups can strike targets within a country or, in the case of the United States, outposts or symbols of the nation abroad, using weapons that range from a simple informational campaign that publicizes their cause to a potential WMD release. Given the rise of states in transition and the porous borders between many states, nonstate actors frequently move globally from hideouts, with and without a nation's approval to operate within that country.

Nonstate actors create many difficulties for state actors. Since these nonstate actors had worldwide access via the Internet, mass media, and other informational tools, they can multiply their original influence well beyond their true value or capability by undertaking a carefully planned campaign of attacks. Intercontinental air travel has allowed potential terrorists to journey around the globe and strike at seemingly invulnerable targets within the "secure" borders of a nation. Additionally, a small terrorist group has the capability to strike many American interests worldwide: military, business, tourist, and cultural. Not only does an attack extract a physical cost, but a psychological one as well. Terrorists can hit an enemy in the heart of their country, even the nation's capital. Additionally, nations that rely on a strong international trade or conduct business operations outside of their borders are vulnerable to a wave of attacks. Although the business may not have any connection with military operations, it still may be a "symbol" for a nation. If a nonstate actor launches an attack on one of these "symbolic" businesses, it can embarrass the host nation by implying that if it cannot protect a small business, it has little hope of securing its property and, more important, its people. Additionally, it can serve as a warning to the business owners not to support the host country or certain causes. Military operations against the nonstate actor by the country whose business was attacked may find it difficult to identify and locate the appropriate enemy forces. The United States faces many such groups that want American support for a particular country to cease, or their presence in the region reduced or eliminated. How the nation proceeds to defend its citizens and property from these nonstate actors will cause fundamental changes in operations.

The defense of the United States from invasion or from a similar threat is a prime goal stated in Article IV, Section 4 of the U.S. Constitution. The U.S. faces a multiple range of threats to the nation and must increase its homeland security. In the Cold War, a defense against a possible bomber attack by the Soviet Union motivated the country to build a series of early-warning systems, networks of surface-to-air missiles, interceptors, and command and control systems. Fortunately, the air-defense system was never used in anger. Today, we face a different threat. Not only do we face a potential threat from a few countries that have the capability to launch an attack on the nation with WMD, but also a range of terrorists that can slip chemical, nuclear, or biological weapons into the United States. Additionally, domestic terrorist groups may also play a role in attacks on people, infrastructure, assets, or other targets. Defending the homeland takes on a more complex picture that will involve not only military members, but civilians as well. The reliance on active-duty personnel to support homeland defense is also changing. Increased participation by reserve and National Guard personnel and units that conduct a wide spectrum of support and defensive operations will change the face of the military. Coupled with an increased amount of civilian interagency cooperation from intelligence, medical, disaster, and law-enforcement organizations, the conduct of homeland security is evolving as the complexity and depth of the threat increases.

The United States faces a rash of potentially expensive terrorist or state-sanctioned actions. People and organizations that wish to strike America at some critical vulnerability can do so in several ways. They can use terroristic attacks to send a political message, use WMD, attack American interests abroad, or launch some form of information attack. The United States and much of the developed world relies on instant, creditable information to ensure economic activities are effectively and efficiently conducted. If information systems are disrupted, then financial activities, such as banking and investment activities, may significantly slow. Normal business transactions may not take place. A more serious threat may arise if information attacks shutdown an electrical-power grid. In this case, lives may be at stake, as the safety of the populace is involved.

The nation might conduct several actions to reduce the threats to its homeland. The nation requires its military and other agencies to prevent, reduce its vulnerabilities to, defend against, and, ultimately, react to an attack on the homeland. These activities must rely on advanced, accurate intelligence that allows decision makers to act on stopping potential incidents. The government must also have adequately trained and equipped personnel to take action, and have adequate command and control of these assets to apply the right amount of their resources at the proper place and time. Coordination between agencies must also ensure that an integrated plan of action is developed and implemented in appropriate situations. These actions will challenge future military leaders because the difficulty of conducting operations and the apparent ease of terrorists and state-sponsored groups to conduct an operation.

Similarly, the vulnerabilities of Americans abroad are also of concern. Persons or organizations that want to strike American citizens or government activities may find it easier to strike near their own home. Attacks on American embassies or military personnel in foreign countries can happen in a number of ways. American naval vessels or aircraft, for example, can be attacked in locations that may not have adequate security assets. Individuals with a boat laden with explosives conducted a suicide attack against the USS *Cole* in

Yemen in October 2000. Individual service personnel may be subject to attack or may be seized as a hostage. The reaction to these actions can range from demands of retaliation to little more than a statement of indignation, but the U.S. government may be forced to change its regional policies. For example, it may reduce naval ports-of-call visits or consolidate its operations to enhance security procedures. This reaction may be viewed in some circles as a sign of fading American power and influence. These actions may also weaken a friendly nation's position inadvertently and so play into the hands of the terrorist group.

Today's world has seen great technological leaps forward in information systems, miniaturization of components, stronger materials, and a host of other products. Many of these technological marvels are not limited to military systems. An individual or small cell of terrorists that wants to create a global communications system needs only to purchase a disposable cellular-telephone. Similarly, if an individual or organization wants an up-to-date satellite photograph of a target, they could buy a satellite image from a number of commercial firms. A group could also use the Global Positioning System satellite as a basis for a navigation system to guide a cruise missile to a target. These systems are a great boon to the commercial world and to consumers. However, these technological marvels are available without much control to a broad audience. The direct transfer and availability of technology provides, in some cases, an almost instant capability to a foe that closes the gap between less-developed militaries and ones that have the latest military technology.

Technology transfer has many unintended consequences. If the military employs more dual-use technology for civilian and military purposes, then a nation may have difficulties controlling its release. Commercial firms that want lucrative overseas-export markets want to sell their products that contain the technology. These firms may argue that if they do not sell the items, their foreign competitors will do so anyway. This situation can result in lost business opportunities and those foreign competitors, given the demand for their products, might develop more advanced technology and overtake American firms. Limiting the sale of the technology may be more harmful to the nation because other countries may not want to share their technology with the country if they are afraid of the limitations on export sale. Conversely, a nation cannot allow particular technology to fall in the hands of a potential opponent. For example, selling ballistic-missile technology or components could slow down the proliferation of such weapons. Unfortunately, how does one determine which component is strictly a component for a missile? Does a personal computer that can process a set of test-launch data constitute a vital component of a foe's ballistic-missile program? Perhaps the nation needs to focus on a particular component.

The rise in technology also offers a nation's opponent the opportunity to seek a particular vulnerability other than the military. Information warfare, mentioned earlier, or other policies can reduce the nation's ability to support its economy. For example, a country that moves away from producing items must continually rely on lower-cost components to make the technology affordable and marketable around the global. Normally, these products are made in areas where labor costs are relatively cheap and production quality stays reasonably high. Disruption of international trade through labor unrest or other actions might affect the economy's performance. In the United States, the economy is very diverse and, in general, strong enough to absorb losses that smaller, less-diverse nations might not survive.

The threats facing the nation and her allies have radically changed since the end of the Cold War. Identifying potential foes is not as easy as in the past. Nation-states are not

the only concern for a nation. Terrorists have, in some cases, as much capability or more to hurt a nation as another country with WMD. Additionally, the venue for fighting a foe has widened from overseas locations to the backdoor of the United States. Many countries have access to advanced technology that allows them to design new weapons or get an "equalizer" that can strike at a much larger opponent.

Future Constraints

In the near future, the United States faces many constraints on its ability to develop strategies to combat potential threats. These restrict the options available for national and military leaders to consider and implement. Some of these constraints are self-imposed, whereas others are created by potential foes. Working around these limitations may create a position where the United States will alter its national interests, goals, and objectives. These modifications will likely cause changes to military force structure, doctrine, strategies, and deployments.

An enduring constraint is the limits on the defense budget. The United States spends about 3 percent of its gross domestic product (GDP) on national defense. During the heyday of the Reagan presidency and the height of the Cold War, average defense spending neared 6 percent. Although we are not fighting the Cold War now, the world is more complex, which forces the United States to prepare for more contingencies than in the past. The country faced the main threat of the Soviet Union in the Cold War; today the nation must consider missions that range from combat operations to humanitarian aid around the globe. This increased demand for capability, given limited funding, creates a situation where the nation needs to prioritize its missions and future expenditures carefully. A dearth of resources creates fewer opportunities to pursue the acquisition of major weapon systems. The weapon systems selected for procurement have little margin of error in their designed role or in unanticipated situations. These systems have to serve longer and have the flexibility to be used in missions that they may not have been designed to perform. Unfortunately, the nation will have little time—if any—to acquire a new capability if a crisis does appear.

Limited funding and resources will require innovative uses of force, as appropriate. National leadership might rely more on political and economic means where military options once seemed to reflect the norm. Instead of ordering an air strike, imposing economic boycotts or offering foreign aid might send a more effective or focused political message to an opponent. Military leadership must improve its efforts to integrate the application of all services' capabilities. For example, the army might have to rely on additional support by the air force and navy to strike targets in close proximity to friendly forces. The United States has great military capability, but so do many of its alliance members and other friendly nations. Instead of fighting unilaterally against an enemy, the nation may have to fight as a coalition. Coalition members may or may not have the properly equipped, trained, and acclimated forces to fight a particular action. Additionally, the combined strength of a coalition or alliance may exceed the efforts of and overcome deficiencies of a single country. Finally, fewer resources may force military leadership to search for innovative approaches to satisfy certain requirements. For example, the United States might rely on unmanned-combat aerial vehicles to either replace or supplement manned aircraft.

These aircraft, with proper munitions, may be able to withstand intense enemy air-defenses and brave dangerous situations without the potential loss of a pilot.

All leaders want to incur the fewest friendly casualties possible. Given the current state of technology, some people believe that wars can be fought with few, if any, casualties. The ability to knock an enemy out of a fight with a minimum of killed or wounded personnel is a major goal and can affect decisions that involve the use of force. During the 1991 Persian Gulf War, the United States had suffered fewer casualties than in other major conflicts in the past. Similarly, the 1999 Kosovo air campaign was fought without a single allied airman being killed in action. The public's acceptance and desire for no casualties in combat can certainly change the perception of commanders and how they will fight war. Will those commanders purposely choose strategies that will abnormally reduce the risk of casualties because of public pressure? Conversely, will public perceptions weigh so heavily in the minds of national leaders that they avoid involvement in situations where casualties might take place, even at the risk of failing to achieve a national interest?

The perception of casualty avoidance can result in several actions. First, the United States might invest its few resources in particular weapon systems and force structure. These forces might involve improved precision, targeting, less reliance on personnel-dependent systems, locating and operating weapon systems on United States bases, or making the systems more deadly. These considerations will require more capability than current systems have. If this option is selected, then it may change the character of the types of conflicts in which we can fight or get involved.

A second possible result is the purposeful avoidance of situations that may involve long and potentially bloody confrontation. This scenario is especially true if there is no apparent national interest or threat involved in a potential action. The United States might select other instruments of power, build a more effective alliance, or national leaders may choose only a few areas in which to concentrate their effort. Should the United States base their decision to deploy forces in a situation that clearly threatens national interests or those that may eventually spread in a region to one day affect us? The United States might shift from a proactive strategy that tries to shape an environment that is best for the United States to one of reaction. For example, if the true measure of American involvement depends on national interest, then where do humanitarian missions fit into the scheme of national interests? If an ethnic conflict within a country turns into a slaughter of innocent civilians, then the nation has the choice of observing or getting involved. Involvement may result in casualties, but does the country have a moral responsibility to act?

A third option may focus on fewer U.S. forces in a conflict and greater involvement by other countries. The nation may court or arrange for other countries to provide ground forces while it uses military forces that are less vulnerable to friendly casualties (e.g., air forces), support (e.g., logistics and intelligence), or arrange for financial resources to be used against the problem. It may take time to create consensus among partners or get other organizations, such as the United Nations, to gather sufficient forces. However, the reliance on other nation's forces, rather than those of the United States, may also send a message to our allies. If the United States is not willing to risk the lives of it military personnel, then why should they? This observation is especially true if the nations that we ask for support are not residing in the particular region, are afraid of a spread of a conflict, or have a limited military. The increased reliance on alliances or coalitions to fight might also spawn the

rise of groupings of individual nations that form regional security organizations without the United States. The loss of American involvement can create situations that leave the nation without influence in a region. One might wonder whether this loss of influence among regional and perhaps global organizations such as the United Nations will translate to a less effective American foreign policy.

The fear of casualties among the American public and, subsequently, national leadership, may constrain what the country's military forces can do to accomplish a particular objective. The internal limitation of trying to reduce casualties is noble and we should never advocate or jeopardize servicemembers' lives needlessly or without purpose. Military operations, by their nature, are dangerous. How much risk a commander is willing to assume to accomplish a mission has always been a challenge. The added pressure to make operations virtually casualty-free may make these missions even more tenuous. Unless the nation's survival is threatened, further questions about casualties will result.

During the Cold War, only a handful of nation-states possessed nuclear weapons that had adequate delivery systems to directly attack the United States. WMD, including biological and chemical weapons, now have spread throughout the world. Nations and individuals have the access to technology and products that may allow them to produce nuclear, biological, and chemical weapons. These threats add a significant punch to their capability to influence and coerce regional rivals and, potentially, menace the United States in a manner that they have never been able to in the past. Nations that have developed a ballistic-missile capability, and who demonstrate the will to use such a weapon, could strike the United States in retaliation for a perceived threatening action.

The proliferation of WMD may force the nation to propose several options. The government may need to operate in an environment that could include nerve gas or biological pathogens. Military forces will require special training and equipment to operate in this new environment. Weapons must be developed to withstand an attack by these instruments, intercept these systems, and protect our military forces and the country's population. National leaders will require the information needed to take action to prevent and defend against WMD use. The nation also needs to prepare policies to respond quickly and effectively to such incidents. The military has, fortunately, prepared for these types of events on the battlefield. Unfortunately, these weapons are also in the hands of terrorists who can create mass casualties domestically against civilian targets. Additionally, with so many WMD devices in a great number of nations' control, the risk of an accidental release of a weapon is greater today than it was in the past.

The United States has a very secure system of command and control of its nuclear-weapons release. The president has the sole responsibility of the release of these weapons. Redundancy of verification of nuclear-weapons release provides ample evidence of the legitimate release of these weapons. Conversely, many countries that have recently developed a nuclear-armed ballistic-missile threat may not. Unauthorized or accidental launch of these weapons may leave a path of destruction throughout the United States. Systems to detect and intercept these weapons have been studied and debated, and will continue to be the focus of much attention in the future.

The United States may have to change its policies of deterrence. Although nuclear deterrence worked well during the Cold War, how does the nation deter terrorist groups that may want to use a biological or chemical weapon? Also, the nation must be able to

quickly respond to countries that have weapons that may threaten their neighbors. Would the nation risk nuclear retaliation if it responds to a WMD release in an area of the world where we have little or no national interest? The nation may try to force other nations not to use or develop WMD by diplomacy, economic incentives (or punishment), threats, or trying to limit the future damage of its forces.

The spread of small, hand-delivered WMD devices can force changes in the way a nation views a battlefield. The United States may be fighting a war in a faraway region. However, the threat of a sympathetic group or individual with a WMD can wreak havoc here at home. The threat from enemy forces on the battlefield now extends to life in the United States. Even if the destructiveness of the weapon is small, the psychological affect on the populace may be greater. One may argue that the release of such an attack may harden the public's reaction to make a harsh response to such an attack. Conversely, others may want to withdraw from the conflict to reduce the possibility of further actions. These reactions can certainly affect the way national leaders respond to a conflict.

The United States has relied on advanced technology, and its application to weapon systems is an important aspect of its national power. The rise of American airpower was predicated on the advance of the jet engine, increased ranges, and advanced firepower, just to name a few advantages over other weapons. The United States has selectively released these advanced-technological systems to its allies, which has given the nation a decided edge in combat. The result of these policies was seen vividly in the 1990 Persian Gulf War and the 1999 air campaign over Kosovo.

Today, the world has greatly benefited from the explosion of international-trade agreements that have resulted in the globalization of many economic conditions. Firms that were once national enterprises now have international subsidiaries or are an element of a multinational corporation that significantly contributes to its profitability. Similarly, customers demand the latest technology in any product that they are considering for purchase. If not, there are always alternative sources and added competition that a firm faces. Military products no longer command the sole use of specific technology that is geared only for military purposes. Instead, these products increasingly use civilian technology. These actions have forced many firms to offer more advanced technology to a number of customers to encourage sales.

The proliferation of advanced technology has reduced the gap between many have and have-not countries regarding advanced weaponry. The United States has a number of concerns about this situation. Countries without an adequate defense industrial base may be able to leapfrog a generation in weapons technology. Countries can advance their own force capabilities without spending billions of dollars on research and development. Nations wanting to acquire advanced ballistic missiles, aircraft, computers, production processes, or other systems can shop from a wide array of available systems. These nations can either try to purchase the product outright or get access to and information about the production process. Countries can gain capabilities in some arenas that rival the U.S. As the U.S. military becomes an expeditionary force, these systems take on a more urgent concern because a potential foe can quickly deploy them in theater against a more sparsely defended force.

The United States must balance the need to keep a viable economic well-being that relies on the open trade of high-technology products. How the nation will deal with the conundrum of selling or restricting technology can influence relations around the world. For example, if the United States desires amicable ties with other countries, then it must

weigh the consequences of selling advanced armaments to certain countries. We can sell nations the latest fighter plane with air-to-air missiles. The sale of computers, software, and communications systems can increase rapidly civilian productive capacity or help upgrade a military command and control system. In the case of the fighter sale, the U.S. government can directly negotiate the release of critical military technology. Conversely, the sale of computer equipment may be a direct weapons-technology transfer or not. The end-uses of the computers are harder to trace and evaluate. How the nation restricts the use of the information or other critical technologies after its release may be a moot point.

The nation's military forces face a future where more potent foes are better armed and technologically savvy. The recipients of advanced technology allow them to find particular weaknesses in the U.S. military. In this case, a nation may be forced to limit its exposure or try to defend itself against a wide range of attacks. Military leaders may be overburdened with many threats that can limit their options to take decisive action. Instead of facing an opponent with overwhelming superiority in all possible situations, the foreign power may actually have several benefits. The spread of WMD and their delivery systems may allow an enemy to threaten the nation's military force as never seen before.

Planning About the Future: Strategic Vision

One of the worst situations a nation's military faces is whether its force is organized, trained, equipped, deployed, and ready to fight the "wrong" war. Military preparations and planning, it is hoped, reflect current and future foes, not ones from the past. Military leaders that were victors in past conflicts may face difficulty in trying to adjust to a world that encompasses new threats and weapons. At the end of World War II, national and military leaders demobilized the armed forces greatly and were unprepared for the rigors of the Korean War. Conversely, during the Cold War, military forces were ready to fight in a Korean War–type scenario or against a possible invasion of Western Europe by the Soviet Union. They were ill-suited to fight an unconventional conflict during the Vietnam War. Today, years after the end of the Cold War and the Persian Gulf War, the nation is still trying to decide what type of forces and structure the military should reflect to meet future challenges. Military forces face a challenge to transform themselves for the future and make the transition to accept new capabilities to fight in the future. They are confronted with operating with legacy systems to fight the Cold War that need modification, yet have to expend limited resources to build future systems.

Unfortunately, nations do not have an absolute ability to forecast the future, but they must start somewhere. One strategy is to get involved heavily in international affairs in an attempt to modify or shape events. These actions may take a large amount of resources and effort not only from military forces, but political, economic, and informational assets as well. These actions need a vision or desired end-state. Recall the proposed method to develop strategy: ends, ways, and means. In this case, one tries to shape events to move from a forecasted future to a desired end.

National leadership needs to decide what type of end-state it wants to see for the country. In an era of uncertainty, leadership may need to become more proactive and less

reactive. The nation needs to seize opportunities or take risks to establish the desired result. Since the world is becoming more complex every day, the ability to control events has become more fleeting. A strategic vision, the ability to devise a strategy that has the potential to turn a forecasted future into the desired result should help organize and apply limited resources to that objective. Strategic vision, advanced planning, or long-term objectives are all related. The common theme among these actions is a forward-looking viewpoint.

Strategic vision requires several elements: time, environment, strategy, will, and resources. The first element is time. How long does the national leadership project it will take to reach the desired end-state? Is the future viewed in a day, month, year, or decade? The nation may have some control over trying to change events over a specified period of time to modify other country's behavior. A nation can move now or wait a few years.

Another element is the environment. Nations that may disagree with policy and appear to be enemies may move to a more friendly status if the environment changes. Suppose a nation threatens a region's stability. If the United States can get that country to become a partner with other powers within the region, the threat may disappear. The United States might try to get the country to democratize portions of its government by providing certain incentives. For example, increasing economic and trade incentives may motivate the country to join other nations to cooperate economically and politically on concerns of mutual interest. Similarly, a nation may enhance its military power by creating alliances, coalitions, acquiring particular capabilities, deploying forces, adhering to certain doctrines, or taking other actions to change or influence an environment.

If the national leadership can determine the desired end-state and can forecast the future, given no action on the nation's part, then it can plan. The change from a forecasted to a desired end-state is the province of strategy (see Figure 5.1). The nation needs to decide how it will change its environment over time. It will also have to determine the
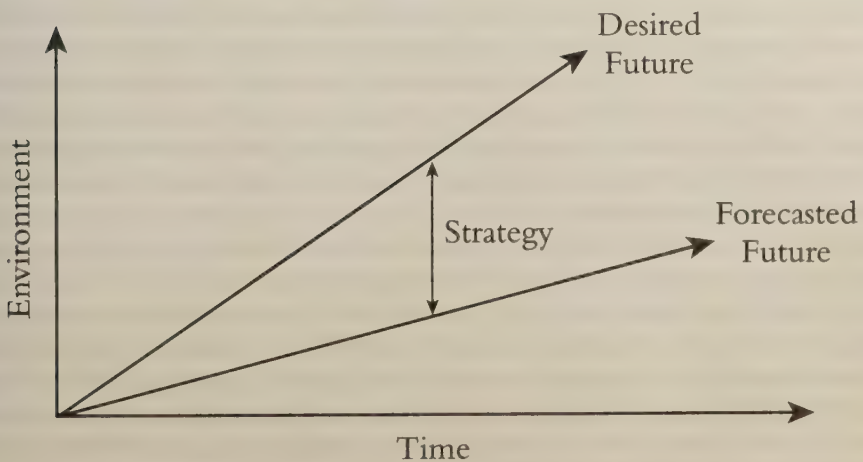
Figure 5.1   Strategic Vision Shapes Strategy

amount and allocation of resources to make these changes. Persons developing strategy are assumed to have a desired objective or goal. The hoped-for result for a nation should provide this objective; the ability of national and military leadership to creatively use resources to manipulate actions into a coherent strategy will be a major element of how America will face an uncertain future.

Although national and military leadership have particular objectives, they must also incorporate flexibility in their planning depending on the objective. Some objectives (e.g., survival of the nation) may leave little room to maneuver. Other objectives, such as increasing economic prosperity, may be accomplished through several avenues and leave national leadership with greater flexibility to plan. Unfortunately, the world is not linear and may not have a definitive set of possible directions. Leaders and policies change throughout the world. These leaders also plan their nation's or group's objectives. The dynamic nature of the process creates many conditions and possibilities to consider. Friendly partners may become competitors politically, economically, or militarily. Nations might gain a military advantage in a particular area or a revolution might force the existing government out of power. Change or modification of policy is as important as developing strategy in the first place.

One of the most important considerations to create a strategic vision and shape an environment over time is the will or decisive authority of a country or leader. All of the planning and resources cannot help a leader if he or she does not have the will or public support to take action or exercise control over a decision that one must take. A national leader may have to assume risk or make a decision that can result in the loss of life or property. For example, suppose the nation wants to support an area of a country under an authoritarian government to become an independent, democratic state. The United States may have to guarantee a number of things, such as loans, or even provide support for its security. Or consider what would happen if the breakaway country were now threatened by the original nation with a forcible return to that state's control. The United States can use diplomatic efforts to coerce or negotiate a peaceful settlement, but would it have the necessary will to deploy armed forces to provide adequate security to deter an invasion?

Creating a coherent strategic vision must also be integrated with domestic and international concerns. A nation's future can focus on many aspects of national security: political, economic, or military. Unfortunately, domestic concerns that involve maintaining a stable national economy may create some problems with military international visions. Suppose military leadership desires more defense spending for better weapon systems. This request for more spending may require additional taxes or debt; in either case this action may seriously degrade the national economy. Taxes can sap consumer and corporate spending; likewise, increased interest rates from additional government borrowing can raise the price of home mortgages or the cost of business investment.

National leaders also require adequate resources. If the nation's goals and strategies are fully developed, then they could provide the appropriate resources to enact the strategy. These resources may require modification: Current military forces may need faster deployment to areas that need little support. The air force may have to acquire additional strategic airlift for surface forces to move them from the continental United States to areas overseas. The army's reliance on heavy, tracked vehicles may require lighter-wheeled vehicles. Additionally, surface forces may have to purchase or replace equipment that can deliver the

appropriate firepower to meet this new requirement. All of these changes require funding, modifications to force structure, and equipment. Organizational changes also are a part of this transformation into a lighter, faster, and deadlier force.

Leaders can create a strategic vision, but without some action to change events, it becomes a meaningless exercise. Strategic vision requires that a nation take action and risk. First, action means the nation must embrace a proactive approach to getting involved in world events. Although the nation might one day become less dependent on volatile sources of and access to fossil fuels, it must still ensure the world has access to reliable sources of energy. If not, world prices would dramatically rise and economic disruption that directly affects the American economy would ensue. Second, the nation may have to take risk. Risk, or assuming a chance of an unintended consequence of an action, may range from a small to a large probability of a possible event. Increased involvement around the world that affects parallel actions in several regions requires much coordination. If one or more actions create adverse situations, the whole structure to shape events may falter. The increased risk to the nation may affect decision making among national leaders.

The United States faces many complex issues that will provide a continuing source of concern about dealing with an uncertain future. The process of creating a strategic vision seems like a complex task, but this approach is not new. For centuries, nations have attempted to modify or shape their environments to create the most advantageous situation possible for themselves and their allies. Trade agreements, alliances, deployments, and other activities were conducted to put pressure on potential enemies or ensure friendly nations were given sufficient assurance of security. Unfortunately, the stakes today are much higher. A WMD release by a host of nations can, at the minimum, produce a staggering number of casualties. Events also change within the instantaneous view of the Internet and global media. Similarly, the race to compete for a limited number of markets can result in billions of dollars in additional sales and jobs to the successful nation. Nations that can significantly change or affect future events may create a very beneficial service for their nation.

Long-range planning provides the basis for much of strategy development. The idea of creating a strategic vision is more encompassing. Vision takes a much broader and longer view of a situation. Whereas strategy looks at specific actions to accomplish a particular objective, vision looks at objectives and what a nation needs to change about its environment to accomplish a set of goals over time. Strategy concentrates on how the nation will apply or use its resources. A strategic vision provides guidance to develop those strategies.

The focus of strategic vision forces national leadership to connect a number of actions. The nation must tie political objectives to a number of instruments of power, such as diplomatic, military, economic, or informational actions. Military leadership will need to become knowledgeable about not only the military, but political, economic, and informational instruments of power. They will have to become true warrior-scholars-diplomats to wield appropriate national power and ensure changes are made. These changes will provide commanders with more tools to meet and overcome problems throughout the world. Conversely, if the nation fails to execute or use a particular instrument of power effectively, the United States may be faced with a more complex problem that may require military forces when it should not have reached the point of armed conflict.

This initial study of military theory and strategy provides one with a broad survey of many key issues. Each of the theorists, principles of war, strategy development, and other

subjects are complex. The changing nature of warfare and peace may not be as much of a problem of weapons systems as one of developing an approach to solve the problem. Technology most likely will change and make warfare more complex, but the most powerful and strongest weapon known to mankind is still the human mind.

If a leader can creatively use the available resources or find weaknesses of an enemy, then the nation may be able to overcome many conflicts. Military history is strewn with casualties who had superior firepower, but were defeated in the field by much-weaker opponents. Thinking about the future may help a nation to avoid many of these pitfalls as it tries to create an environment that allows a nation to exploit its advantages against an enemy's weaknesses.

Conclusion

Military operations undoubtedly will be a critical option to exercise in a future national security crisis; the nature of military operations, however, has evolved dramatically from the past. During the Cold War, the nation used primarily political and military options to deter and confront the Soviet Union and her allies. Today, many of the possible options to solve national security problems focus on economic costs and incentive. In both cases, the combination of resources from different instruments of power forced national and military leaders to plan their employment carefully to achieve specific results.

Despite the best efforts to shape an environment that is beneficial to the United States, the nation will continue facing an ever changing level and diversity of threats and situations dealing with national security problems. These changes will force military planners to become more innovative and creative as force structure and weapons designed to fight particular conflicts may not be appropriate in all situations. The United States military must be able to become a flexible force ready to combat threats, from terrorists at home to possible nuclear warfare. The use of military theory to answer problems that seem "new" is still valid. For example, concepts from Clausewitz and Sun Tzu can be applied in several current situations. One might use Sun Tzu to better understand the complexities of guerrilla warfare and counterrevolutionary movements. Additionally, nuclear strategy developed by Bernard Brodie or Thomas Schelling for the U.S. government could be applied to nuclear arms races being conducted between India and Pakistan to counter an increasingly dangerous situation than can spread throughout Asia and eventually affect the world.

The future military officer must be cognizant of other national instruments of power, and must be an expert not only about the capabilities and limitations of his or her own service, but also about how other services operate. Future air force officers must be able to capitalize on the abilities of joint operations. Land-based airpower can offer the means to project great amounts of firepower around the globe. However, surface operations that include ground and naval operations can support, or in some cases present, a more appropriate method to solve a crisis. A future commander must evaluate the most effective and efficient force to fight an enemy. Since the United States cannot afford to spend resources to counter every possible threat, the use of a combination of forces may provide the neces-

sary capability to counter multiple, complex threats. This requires military officers who understand and appreciate the capabilities to function in a joint manner.

Understanding how to prepare for military actions and then executing the operation takes extensive planning. Developing the appropriate strategies and plans to accomplish an assigned mission will continue to be one of the most critical components of any military operation. Creative thinking in a dynamic environment has and will mark the successful military leaders. The use of military strategy and applying theory will continue to challenge and vex military leadership. Strategy, the key to success, pulls together all elements of resources, end-states, constraints, and other concerns. Developing an effective strategy is the heart of military actions. However, without military theory, the principles of war, strategic vision, and a creative military leader, the creation of strategy will be flawed.

Notes

1. William J. Clinton, *A National Security Strategy for a Global Age* (Washington, DC: The White House, December 2000), 7.
2. Ibid., 47.
3. Institute for National Strategic Studies, *Strategic Assessment 1999* (Washington, DC: National Defense University, 1999), 295.
4. Eric V. Larson and John E. Peters, *Preparing the U.S. Army for Homeland Security: Concepts, Issues, and Options* (Santa Monica, CA: RAND Corp., 2001), 51.

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Dr. Chun is a 1978 graduate of the University of California, Berkeley. He holds an MA in Economics from the University of California, Santa Barbara, MS in Systems Management from the University of Southern California, and Ph.D. in Public Policy Analysis from the RAND Graduate School. He also completed Squadron Officer School, Air Command and Staff College, Naval Comman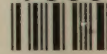d and Staff College, and Air War College.